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| 1. | African Lion (<i>Panthera leo leo</i>) | Adi Shankar Karthik |
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Disclaimer

'Cheetal' - started in October 1958, is the Official Journal published by Wildlife Preservation Society. The journal is intended as a medium for communication and discussion of important issues that concern wildlife and environmental activity.

All articles published in 'Cheetal', including editorials, articles, research papers, observations and commentaries, letters to editor and book reviews are deemed to reflect the individual views of authors and not the official points of view of editors and executive members of the society. All articles have been edited by the authors and the details in the 'About the author' section have been given by the authors.

Articles and Research Papers, once published in 'Cheetal' must not be published in other magazines and journals without permission of the Editor, in accordance with the Copyright Act.

The contributing authors are solely responsible for the accuracy of scientific contents particularly the scientific names of the species and statistical data mentioned in their articles. Authors are requested to send photographs related to the article and research papers (Example - If you are describing the findings related with fish or other animal, the photographs (colour) of that particular fish or animals. The location map or Special site (Lake, River, Pond, Field etc.) must be given in the writeup).

APPEAL

We are trying to procure the missing issue of Cheetal for our library. Our member Mr S S Bisht, IFS has made a list of missing issues which we have sent on email to our members. A couple of members Mr Akhlaq Husain and Dr S P Singh have donated a few copies from their personal collection. I appeal to the other members to go through the list and come forward and donate extra copies to our Library. Due credit will be given to the members.

EDITORIAL

Lion. The King of the jungle. The epitome of power, strength and bravery. After the black panther and white tiger we could think of nothing but the lion on our cover page. The amazing picture is complemented by an equally interesting article on the Asiatic lion by Dr Sandeep Kumar and Shri RL Meena. The cover pages also include photos of the African Lion by two accomplished wildlife photographers Prakash Singh Gariya and Adi Karthik Shankar.

This issue of Cheetal consists of articles of the Gir lion from Gujarat, Pygmy Hog from Assam, Vultures and Trogon from Uttarakhand, Highlands of Central India from Telangana, Tigers from Madhya Pradesh and Snakes from Uttar Pradesh. These articles selected from across the country by our President Sri Rashmi Kant Shukla IFS are an attempt to give our Journal a Pan India coverage. For the first time we have featured a book review written by the President himself. This should motivate publishers to contribute reviews of books pertaining to Wildlife and Nature in future. There are also a couple of articles by our members on the major events which took place in 2018 as part of our Diamond Jubilee Celebrations.

Cheetal. The Journal, first printed in October 1958 started as a biannual publication. How it went on to become a Quarterly Journal over the years is a mystery yet to be solved. From next year CHEETAL will be published In April and October every year. To compensate for the reduced numbers, we shall make the journal more voluminous. Mr Pankaj Tomar our Executive Body member has been helping with the editing of the journal. His name has now been included in the Editorial Board.

Internet has made the world a smaller place. We started a Facebook Group a year ago called 'Wildlife Preservation Society Estd 1958'. I request all our members on facebook to join the group so that they can get regular updates of our events and activities. This page has also helped us connect with two of our old members Sumit Dookia and Raza Kazmi whom we had lost touch with over the years due to change in address. I welcome these members back to our Society along with five new members.

A number of activities were organized to commemorate the Diamond Jubilee of our Society. I am glad our members took active part in all the events. A special thanks to our young members Pranav Goel, Ankit Chamoli and Dhritiman Singh Chandella who were present in each and every event. It is good to see these young members so actively involved. It also reassures us that the future of our Society is in good hands.

I request members and authors to send their articles to the email address (wpsidoon@gmail.com) given on the cover page. Recently, I received an email from B. Patrick Fahey, a student of Arizona State University U.S.A. requesting for an article published in CHEETAL in 1964. While e mails from Dr S Farooq and Dr Johnsingh motivate us, it is emails from people like Patrick that remind us of our rich legacy. It also puts responsibility on the shoulders of the Editorial Board to restore CHEETAL's lost glory and come out with a world class journal.

Dr Prashant Singh
Executive Vice President

LETTERS TO THE EDITOR

Dear Prashant,

The new issue of Cheetal is very impressive. Keep up the good work.

Just returned from Rajasthan after spending ten days there (training program for 30 ACFs and RFOs) and that too four nights in the new Mukundara Hills TR, a tiger reserve which is 80 km long and 3-5 km wide surrounded by nearly 100 villages of largely poor people with an abundant livestock population. In addition to that during July-September thousands of migratory sheep and goat used to graze in the Reserve. Therefore one can understand the immense biotic pressures the Reserve area had in the past.

In such a situation the Rajasthan FD has built an 80 sq.km. enclosure by building 55 km of fencing (28 km wall and 27 km chain link fence), involving nearly 1,200 labourers. It is remarkable that the enclosure was built within a short period of four months (January - April 2018) in spite of the fact that water had to be carried for the entire construction from only one location the APC near Darrah forest bungalow. The money spent by the Rajasthan government was ₹. 30 crores. They have one male tiger now (one that had strayed from Ranthambhore TR) and the FD is confident of enlarging the fence to 200 sq.km.

The habitat is recovering and presently there is a sizeable population of nilgai. Drove 125 km and counted 80 nilgai, many females had twins and twice even triplets were also seen.

Will be in touch Prashant.

A.J.T. Johnsingh

Dear Dr Prashant,

I convey my appreciation and greetings for improvement in the quality and content of the "Cheetal" in a very professional way. It is one of the best magazine of the Society which gives insight into wildlife through articles and photographs which shows the hard work and deep interest of the Editorial Board. Please keep it up. Data updation form sent by you is appended.

With best wishes,

Dr S. Farooq

Hi Dr. Singh,

I am a graduate student at Arizona State University and am searching for an article published in The Cheetal in 1964. I am unable to obtain it from locations in North America. The article was written by Hari Dang and it titled "A natural sanctuary in the Himalaya: Nanda Devi and the Rishiganga Basin" and was published on pages 34-40 of the 7th volume. Below is the bibliography:

26566 Dang, Hari 1964. A natural sanctuary in the Himalaya: Nanda Devi and the Rishiganga Basin. Cheetal. 7: (1) 34#40.

Please let me know if there is any way I can obtain a copy of this article.

Thank you,
B. Patrick Fahey

ASIATIC LION'S : RECLAIMING THEIR LOST TERRITORIES

Dr. Sandeep Kumar¹, R. L. Meena²

¹IFS, DCF, Bhavnagar

²IFS (Rtd), Former PCCF and Chairman, Gujarat Biodiversity Board, Gandhinagar

Email: rlmeena58@gmail.com

Gir Forest is one of the oldest sanctuaries in India and known last refuge of Asiatic Lions (*Pantheraleopersica*). The Gir Protected Area is located in the Saurashtra Peninsula of Gujarat State of India between Latitude 20°40' N to 21°50' N and Longitude 70°50' E to 71°15' E. It is the largest biodiversity rich continuous tract of forest. This unique ecosystem comprising of over 606 species of plants, 39 species of mammals, over 300 species of birds, 37 species of reptiles and more than 2000 species of insects. The total area of Gir National Park and Sanctuary extends to 1412.13 sq.km. While Gir Protected Area network is comprising of 1883.04 sq.km. The details of notified forests of Gir Protected Area network is given below:

Status of Forest	Area in sq.km.
Gir National Park	258.71
Gir Sanctuary	1153.42
Pania Sanctuary	39.64
Mitiyala Sanctuary	18.22
Reserve Forest	227.90
Protected Forest	107.5
Coastal and Un-classed Forest	77.63
Total	1883.04

The Gir sanctuary and National Park has earned global acclaim for one of the best Lion Conservation success story in the world. Initially, the forest of Gir was originally declared as reserved forests by several separate notifications issued by the Acts of States of Junagadh and Baroda. An area of 1265.01 sq. km. was notified as sanctuary by the State Government in 1965 under provisions of "The Gujarat Wild Animals and Wild Birds Protection Act, 1963 vide notification No. GKH/97/WLP/660/62848-P dated 18.09.1965." Subsequently, the forests were declared as Gir National Park and Sanctuary under Wildlife Protection Act (1972). The Sanctuary declared on 18.09.1965 is completing 50 years of its notification and the sanctuary has achieved many milestones during this period.

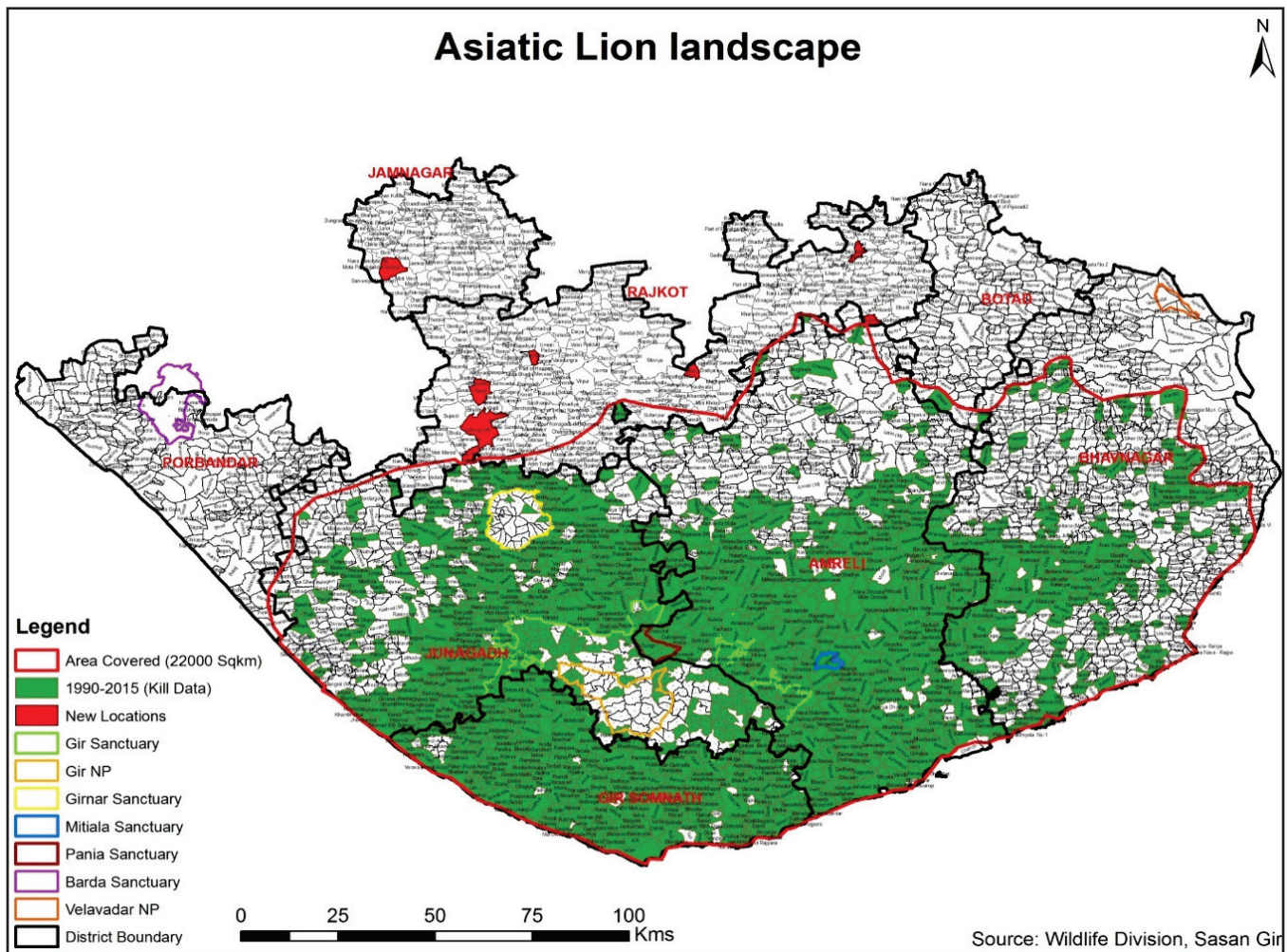
The records of population of Asiatic Lions increase in and outside of the Protected Area network is given below:

Year	Male	Female	Sub-adult	Cub	Total
1963	82	134	0	69	285
1968	60	64	0	51	177
1974	40	52	38	50	180
1979	52	68	27	58	205
1985	66	75	0	48	239
1990	99	95	0	63	284
1995	94	100	39	71	304
2001	101	114	57	55	327
2005	89	124	72	74	359
2010	97	162	75	77	411
2015	109	201	73	140	523

The rare and endangered species has been saved from the threshold of extinction to a relatively secured status due to excellent managerial efforts. The focus of management transformed from working to wildlife management. As a result, the population of Asiatic Lion and other wild animals has increased manifolds. The population of Asiatic Lion is at present 523 (**an increase of 27% over last five years**) based on recent Lion Population Estimation held in May 2015. The beauty of wildlife and its associated biodiversity in Gir landscape cannot be defined just by one or two species. Unique flora and fauna of the Gir add extra mile to the Gir Sanctuary. The biodiversity conservation could have not become possible without support of local people and effective management. Over decades of management, Gir has passed through various approaches like flagship process, ecological, scientific, modern and people centric. That is why, even though, increase in wildlife population, the man-animal conflict is below threshold level. The status of Asiatic Lion is upgraded from critically endangered to endanger by IUCN. Thus, the success of Gir Sanctuary is considered as global success.

In the recent past, it has been observed that many lions are moving outside the sanctuary limits. Till the census conducted in 1990, lions were occasional visitors to Girnar, Mitiyala and coastal forests. However, the situation has changed since then and this species started reclaiming its lost territories. Prides of lions have occupied territories in Girnar, Mitiyala and coastal forests and adjoining areas of Amreli and Bhavnagar districts permanently.

Mitiyala forest is connected with Gir east by corridor consisting of hills, private grass lands and wasteland in Lasa, Dhawadia, Navidhari, Lapado. Plains in small stretches between hills are cultivated at a few places but merge with natural terrain. This corridor helps migration of the animals from Gir east to Mitiala Sanctuary. Coastal forests in Rajula and Jafrabad is approximately 30 km away from Gir boundary. Vegetation cover along Raval River and shrubs in waste lands and panchayat land probably provided corridor for migration to the coastal zone.



Protected forests adjoining the sanctuary, Babaravidi, Prosopisshrubland near Prachi and Sutrapada and Singhoda River may be other routes for migration of lion from the Gir forests. First migration of lion towards the coastal forests started in 1987-88 but now this has become home range for the animal. It surprised everybody when Gir lions visited Diu in January, 1996. One lioness and two cubs were in the Casurina (sharu) plantation in Diu. They were brought back to Gir. It has been observed that majority of migrated lions were sub-adults and old. They were probably compelled by the dominant males to leave the pride and territory.

The most significant fact that emerges from an analysis of lion grouping tendencies in the Gir forests is the minimal association between resident pride females and the resident males. The presence of cubs probably proved to be a deterrent for a closer association of female with adult males. Therefore, Gir probably represent a gradual breaking down of the social bonds of the lions, at least between the sexes. The availability of an extremely vulnerable prey (livestock) and a more closed habitat offering denser ambush cover enables the male to hunt efficiently which accounts for their much weaker social bonds with the female as they no longer depend on them for their food. Another factor contributing to this situation is the rather small size of chital, the model prey. If males were to spend a larger portion of their time with the females, they would be competing with the rest of the pride for food. There would be nothing left for the pride to feed on from a 45 kg chital after a couple of male lions have fed on it.



Asiatic lion and humans

Lions are re-colonizing their lost territories through the past two decades where they were not present for the last two centuries. They are occupying a human dominated landscape where the species is unknown to the upcoming generation and vice versa. The coexistence of this magnificent species in future will depend upon the adaptability of the local people, and management and development of habitats. Maldhari (cattle / Livestock owners) hamlets, locally known as Nesses and Forest Settlement Villages (FSV) are the human settlements inside the Gir Sanctuary. As per the 1971 assessment, there were 129 Maldharinesses (hamlets) with 845 families scattered all over Gir forests. With the implementation of Maldhari resettlement process as part of the Gir Lion Project which continued from 1975 up to 1986, 580 families were resettled outside the Gir Sanctuary and 388 families remained to be resettled. At present due



to growth in Maldhari population during the period from 1986 to 2009 and also due to fragmentations of joint Maldhari families in to smaller families, it is estimated that there are 1200 Maldhari families with about 17000 livestock inhabiting about 50 to 54 nesses in the Gir Sanctuary. Maldharis do not own land but have grazing rights in the Gir Sanctuary. Their livelihood is based on livestock keeping and they earn their income from milk, milk products and cow-dung manure.



Besides Maldhari nesses, there are 14 Forest Settlement Villages in about 50.44 km² of the Gir Sanctuary where about 658 families (Population 4874) own 18.66 S q. Km. of cultivation land on lease. The livelihood of the FSV communities is agricultural or horticultural farming and livestock keeping. Besides land holding families there are a few families who do not hold cultivation land but earn their livelihood as farm



Photo : Pramod Kumar Angra



labour or village craftsman. Such families are locally known as Ubhad. Of the total 14 FSVs, 11 are located on the periphery of the Gir Sanctuary and 3 with about 154 families are land locked by Forest Land notified as Sanctuary well inside the PA.

As presently lions are distributed in Asiatic Lion Landscape which is around 22,000 km² Lions do have large Home Range outside the Gir PA and

movement occurs between the PA and outside areas across a human dominated landscape. Satellite lion's population outside Gir PA are usually non-selective for any habitat as they ventured even into villages but they need specific habitat patches for resting and as breeding ground.

Because of strong human and wild animal interface at the Nesses, FSVs and peripheral villages, inevitable Man-Wild animal conflict is a major conservation management concern.

The conflict from wild animals to human is in terms of (a) Human injury, (b) Human death, (c) predation by carnivores on the livestock and (d) crop damage by herbivores. The conflict from Man to wild animals is in terms of (a) encroachment and destruction of wild animal habitats, (b) Degradation of wildlife habitat due to over grazing and over exploitation of fuel wood, small timber and non-wood forest produces,

and (c) pressure on habitat and disturbance to the wildlife ecosystem by excessive tourism or non-permitted tourism.

The people living in the landscape have got two distinct characteristics, first they are very religious minded and second, except a few communities majority of people are purely vegetarian. Due to these qualities of the people, poaching is almost absent except only few sporadic cases. Unlike in the other forests all over India, there are no organized gangs operating in and around the landscape largely because the people believe in nonviolence, and consider wild animals as sacred. People of the region realize the benefits they derive as part of eco-services, sustainable economic services, cultural services, inspirational and recreational facilities etc. which result into public support for conservation. Legal issues related to demarcation of boundaries, settlement of rights and concessions have already been settled in many areas. Except a few rights granted, the most of the PAs is free from other liabilities which provide strong legal base for protection and management of the area. Indigenous knowledge of staff, specially trained manpower in the forest department is major managerial strengths in the system.



About the Author :

- Mr. R. L. Meena is from the 1984 batch of Indian Forest Service and allotted to Gujarat Cadre. He has worked as head of forest division in the field of social forestry for extension of forests on non-forest-area and motivation to local inhabitants for the conservation and protection of forests, Territorial Forestry for development & conservation of existing flora and fauna, Implementation of Joint Forest Management in managing the Forests, Wild life division in Gir N.P. & Sanctuary (Gujarat) for management in managing & conserving the biodiversity, implementation of Eco-development project in GIR P.A. Worked as Nodal officer to Gujarat state in implementing the Forests Conservation Act-1980, with the guidelines of Central Government, Dealt with the Co-ordination of research activities in Arid Forest Research Institute, Jodhpur for the extension & development of Forests.
- Nodal Officer for UNDP-GEF project formulation on "Integrated Ecosystem Approach to rehabilitate degraded arid and semi-arid lands of Western India for Combating Desertification".
- Held the post of Chief conservator of Forests, Kutch and managed Kutch Biosphere Reserve, Conservation Reserve, Bustard Sanctuary and Chinkara Sanctuary. Also managed the mangrove forests on western coast of the Country.
- After that hold the post of Chief Conservation of Forests (WL) Junagadh, had the experience of managing Gir National Park for 5 years, one of the most recognized conservation area for Asiatic lion and other wildlife.
- Retired from the post of PCCF & Chairman, Gujarat Biodiversity Board, Gandhinagar and involved in Conservation and development of Biodiversity and its sustainable use by the commercial industries.

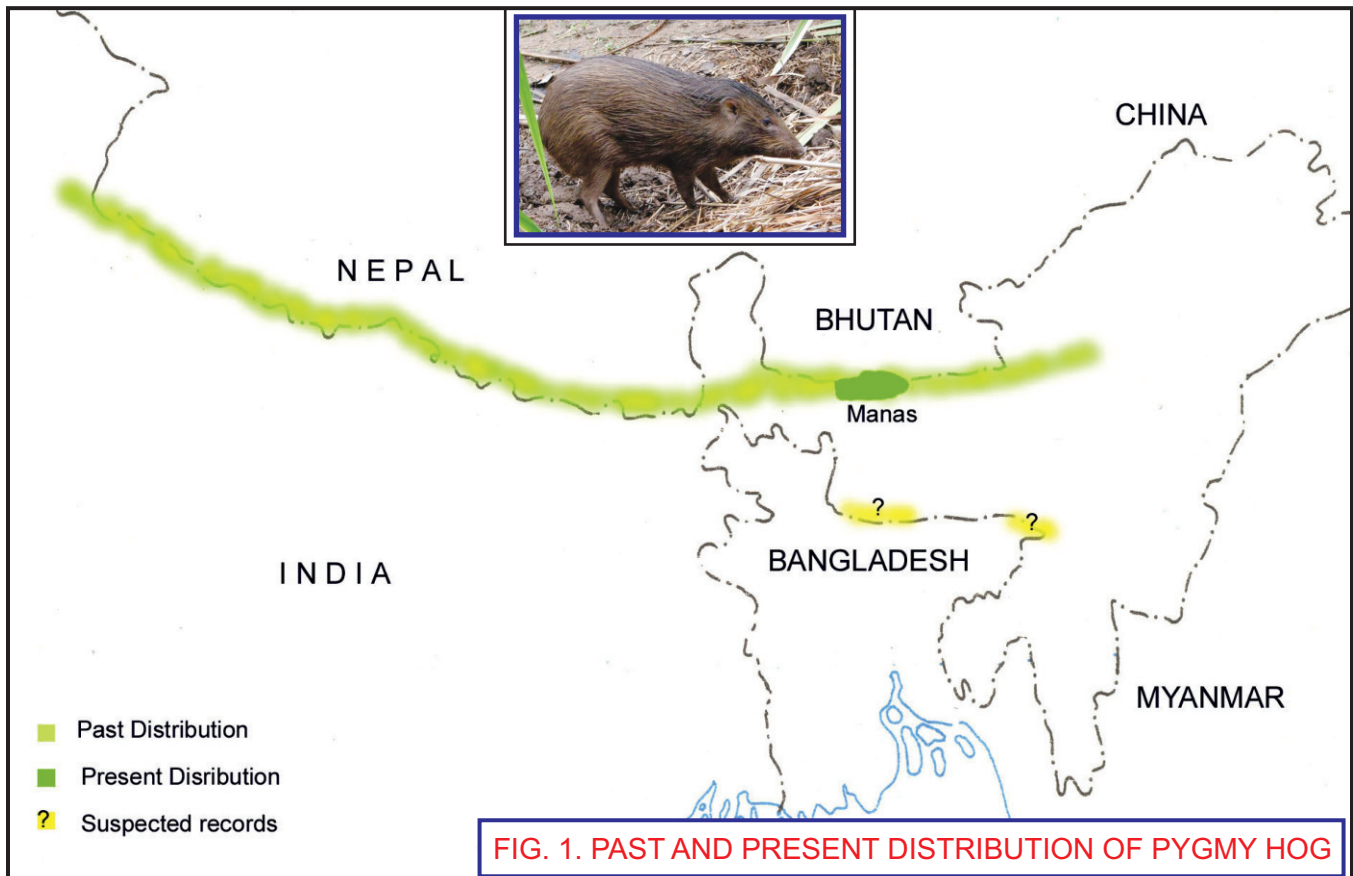
CONSERVATION BREEDING & REINTRODUCTION OF CRITICALLY ENDANGERED PYGMY HOG (*Porcula salvania*)

Dr Parag Deka¹, Goutam Narayan²

¹Project Director, Pygmy Hog Conservation Programme, Gowahati, Assam
Email: Parag.Deka@durrell.org

²Wild Pig Specialist, PHCP, Assam

The smallest and the rarest member of pig family, pygmy hog (*Porcula salvania*) belongs to a unique monospecific genus with no surviving close relative. It is one of the few mammals in the world that constructs a "house" or nest to live. Unfortunately, the species is at the brink of extinction, as it has been exterminated from most of its original range in India and Nepal. In the past, it was found in a narrow strip of tall and wet grassland plains in the area south of Himalayan foothills from Uttar Pradesh to Assam, through Nepal terai and Bengal duars. Currently, it is restricted to a single viable population in the wild in Manas Tiger Reserve and three reintroduced populations in Orang National Park, Sonai Rupai and Barnadi Wildlife Sanctuaries, all in north-western Assam. Current population estimates in Manas shows a declining trend as only about 200 hogs, or almost half the numbers estimated in mid-1990s, may survive in the last original population. Conservation efforts since 1996 have however put the species on the path of recovery #



about 50-60 hogs are maintained and bred in captivity and 100 captive-bred hogs have been reintroduced in the wild since 2008 in three protected areas. The species is categorised as "Critically Endangered" by IUCN and is listed in the Schedule I of the Indian Wildlife (Protection) Act.

DISTINCTIVE CHARACTERS

Pygmy hog measures about 65 cm (25 inches) in length and 25 cm (10 inches) in height and weighs 8 to 9 kg. Females are a little smaller and the newborn babies weigh only 150 - 200 g. A vestigial tail (2.5 cm or 1 inch in adults) and only three pairs of mammae distinguish it from the wild boar (*Sus scrofa*) which, despite being much larger, often gets confused with pygmy hogs. The pygmy hog is called Nal Gahori or Takuri Borah in Assamese, Oma Thakri in Bodo, and Sano Banel in Nepali.

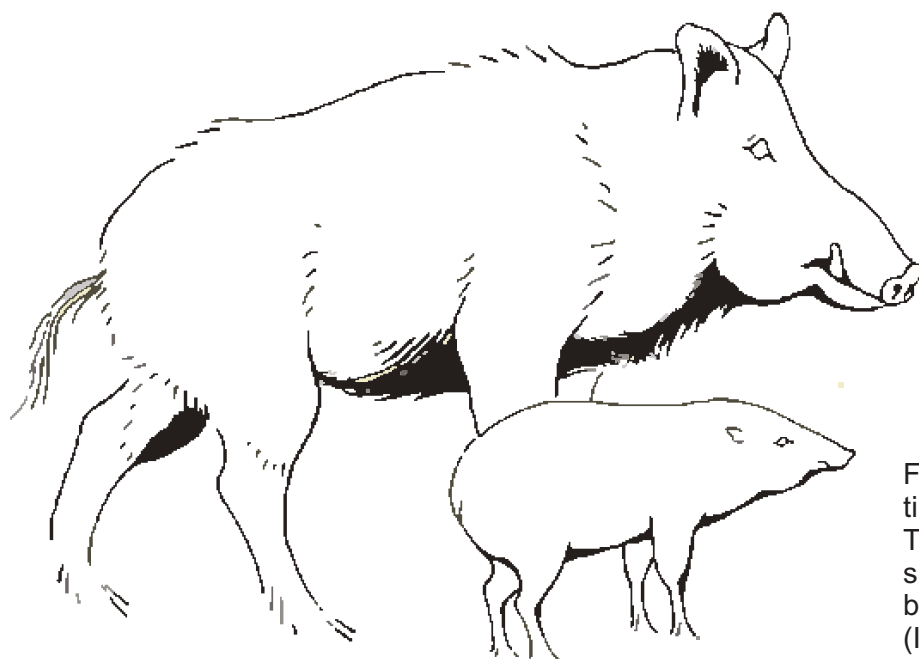


Fig. 2. A wild boar is about 10-15 times bulkier than a pygmy hog. The tail of an adult pygmy hog is smaller than that of even a baby wild boar.
(Illustration by William L. R. Oliver)

THREATS AND IMPORTANCE

The main threats to survival of pygmy hog are loss and degradation of habitat due to human settlements, agricultural encroachments, flood control schemes, and improper management. Some management practices, such as planting of trees in the grasslands and indiscriminate use of fire to create openings and to promote fresh growth of grass, have caused extensive damage to the habitats the authorities intend to protect.

The survival of pygmy hogs is closely linked to the existence of the tall, wet grasslands of the region which, besides being a highly threatened habitat itself, is also crucial for survival of a number of endangered species such as the greater one-horned rhinoceros (*Rhinoceros unicornis*), tiger (*Panthera tigris*), eastern

barasingha (*Rucervus duvaucelii ranjitsinhi*), water buffalo (*Bubalus arnee*), hispid hare (*Caprolagus hispidus*) and Bengal florican (*Houbaropsis bengalensis*). The pygmy hog is one of the most useful indicators of current wildlife management practices in these habitats as it has disappeared from grasslands which still support some other species. It is therefore important to understand why it is disappearing faster than other less sensitive species and take remedial actions if we wish to preserve the original habitats in their pristine state and with optimal diversity. This will eventually benefit all species of these threatened habitats. Preserving these important habitats, which are one of the richest in the Indian subcontinent in terms of their biodiversity, will also help in maintaining long term ecological and economic well being of the region. These wet grasslands serve as buffer against floods in rainy season while maintaining high groundwater levels in dry season, indirectly benefiting farming communities living in the fringe areas.

CONSERVATION ACTION PLAN

It was therefore essential to formulate a properly structured action plan to save the species and its habitat. This included:

conservation breeding of the species as an insurance against the possible early extinction of the species in the wild and to provide animals for reintroduction;

upgrading the (legal as well as actual) protection status of the above sites; field research to plan ideal management practices for maintenance of optimal diversity of these habitats and mechanism to implement the recommendations;

reintroduction of viable number of pygmy hogs in selected sites from where they have disappeared , for their long term survival in the wild, monitoring the reintroduced populations; and

monitoring and modifying habitat management practices to promote survival of all original inhabitants of such habitats.

PYGMY HOG CONSERVATION PROGRAMME

The Pygmy Hog Conservation Programme (PHCP) is a broad-based research and conservation programme which aims to fulfil at least some of the above requirements. This important recovery programme for the highly threatened species and their equally endangered habitats is being conducted under the aegis of a formal Memorandum of Understanding (MoU) signed between IUCN/SSC Wild Pig Specialist Group, Durrell Wildlife Conservation Trust (DWCT), the Forest Department, Government of Assam, and the Ministry of Environment and Forests, Government of India.

The main aim of this collaborative programme is conservation of the pygmy hogs and other endangered species of tall grasslands of the region through field research, captive breeding and

reintroductions after adequate restoration of degraded former habitats. The above MoU stipulates that ownership of all pygmy hogs bred in captivity would lie with the Government of Assam till perpetuity. Translocation and reintroduction of any such animal is possible only with mutual consent of the agencies involved.

CONSERVATION BREEDING – Started with six hogs captured from the last population on earth

One of the main objectives of the Programme is to establish a well structured conservation breeding project for pygmy hogs as an insurance against the possible early extinction of the species in the wild and as a source of animals for reintroductions projects. In 1996, six wild hogs (2.4 or 2 males and 4 females) were caught from Manas National Park and transferred to a custom built research and breeding centre built at Basistha near Guwahati. Since permission to bring in more than six founders was not given, it was decided to capture a few pregnant females by timing the capture to period when the sows are in safe mid-term pregnancy. A total of 11 hogs were captured and the other five were released at the capture site after fitting three males and a female with radio harness for radio-telemetry studies.

Increase in captive population: The six hogs settled down well in Basistha and 3 adult females, which were pregnant from wild, produced healthy litters in 1996. All but one of the 13 young (7.6) were reared. Seven more litters were born in 1997 and 24 (15.9) young were reared almost doubling the captive population from 18 to 35. The captive population increased steadily despite some setbacks, such as high infant mortality due to piglet diarrhoea # and 22, 11 and 14 more young were reared in 1998, 1999 and 2000 respectively taking the population to 65. This unanticipated increase in the captive population had created some accommodation problem, but extension enclosures were added at Basistha and since the entire global population of captive pygmy hogs were at one site a second breeding facility was developed at Potasali near Nameri National Park in Assam.

Later, curbs were imposed on the reproduction when the captive population rose to 77 in 2001, which constituted a 13-fold increase in the stock in 6 years, but the hogs could not be released due to prevailing security situation in and around the potential reintroduction sites. Till 2007, around 70 hogs were maintained in captivity, and after the situation improved in reintroduction sites it was decided to release about 11-12 hogs every year into the wild by breeding them in adequate numbers. A population of about 50-60 hogs is now maintained in captivity and every year up to 20 babies are born at the two breeding facilities. Till 2016, over 140 litters with 559 hogs have been born at the two breeding facilities and 323 (179.166) or about 58% of the young have been reared beyond the age of three months.

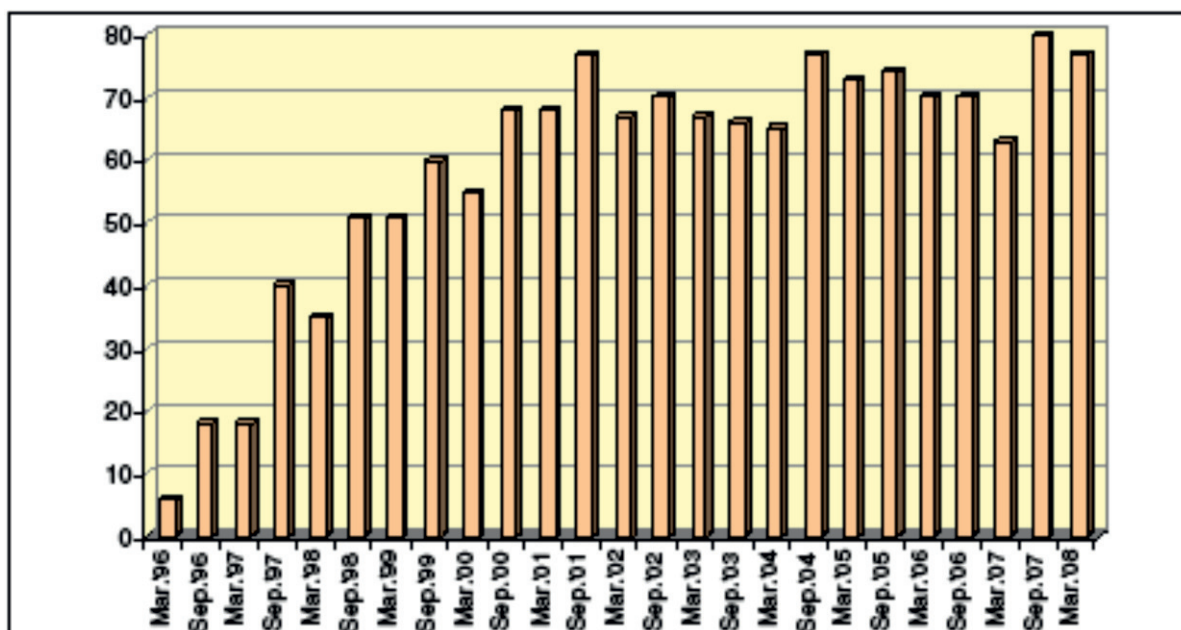


Fig. 3. Increase in captive population at Basistha centre

REINTRODUCTION - 108 Captive-bred pygmy hogs released into the wild

In order to prepare the captive- bred hogs for soft release into the wild a pre-release centre was established at Potasali in 2006. This facility includes a holding enclosure and 3 large (3,200 m²) prerelease enclosures. These enclosures are a part of the soft release process and consist of near natural simulated grasslands where hogs earmarked for release to the wild are kept under minimal human contact. They are encouraged to forage naturally and their supplementary diet is gradually reduced to less than a fourth of daily requirement. Their behaviour and habitat use are studied and it was encouraging to note that these hogs start behaving like wild animals and learn to survive independently in the wild within 2-3 months. After about 5-6 months in the pre-release enclosures the hogs are taken to the reintroduction site where they are kept in a small enclosure for 2-3 days before being allowed to escape to the wild. The release enclosure site is later used as baiting site to monitor the released hogs.

After extensive surveys to locate possible reintroduction sites, three sites in Assam - Sonai Rupai Wildlife Sanctuary, Nameri and Orang National Parks, were shortlisted. The Barnadi Wildlife Sanctuary too was kept under observation as a future release site. Efforts were initiated in 2006-2007 to restore the grasslands in these protected areas for improved management and protection with the help from the PA staff and authorities. In Sonai Rupai the habitat improved rapidly after indiscriminate grass burning and livestock grazing were controlled, while the identified grasslands in Dekorai area of Nameri NP did not recover as the livestock grazing could not be controlled. The first batch of 16 (7.9) captive-bred hogs were released in the Gelgeli grasslands of Sonai Rupai in May 2008. It was the first time that captive bred pygmy hogs were released in such numbers in the wild. All efforts were taken to monitor them using field signs



Release operation in Orang: Project team near release enclosure; a hog being released; radio tracking of released hogs (nests, foraging marks, footprints, droppings etc.) and a video camera trap as it is almost impossible to see them in the tall grass. One of the pregnant females farrowed successfully in the wild and it was estimated that about 12 of the 16 released hogs continued to survive a year later. With the release of 19 more hogs a total of 35 (18, 17) hogs in 8 social groups were released in the Sonai Rupai.

Similarly, 59 (26.33) hogs in 12 social breeding groups were released in better managed grasslands in the northern parts of Orang National Park between 2011 and 2015. Breeding in the wild have been recorded every year after release and their numbers have more than doubled. Field studies have revealed that the released hogs have dispersed up to 3 km. In May 2016, PHCP reached a milestone of releasing 100 hogs into the wild when six hogs were released in Barnadi Wildlife Sanctuary, the third reintroduction site. Sixteen more hogs were released in Barnadi in 2017 and 2018 taking the number to 116. These hogs are being regularly monitored using radio-telemetry and field sign surveys.

Capture of additional wild hogs: Since the size of the initial founder population was very small (6), plans were made to capture some more hogs from Manas in order to improve the heterozygosity and survivability of the captive and future reintroduced populations. After several attempts the project team managed to capture a male and two female wild pygmy hogs in March 2013 from the last remaining original population of the species on earth in Manas National Park.

The capture operations were organised after obtaining necessary permits and 72 drives were conducted using 13-15 elephants and 20-25 pedestrian beaters. Most of these drives were conducted in a 6-7 km² area in Bansbari Range of Manas and altogether 15 pygmy hogs were flushed including the 3 that were trapped. The captured hogs were incorporated in the breeding captive population after due care.



Capture operations in Manas: Nets are deployed; elephants and beaters line up; captured wild hog in bags



Part of the capture team in Manas

Genetic studies: Efforts are being made to initiate genetic studies on pygmy hogs to determine relatedness among the hog sub-populations through DNA fingerprinting. A phylogenetic study using its mitochondrial DNA has already revealed that the pygmy hog belongs to a unique mono-specific genus, *Porcula*, and is not closely related to wild and domestic pig (*Sus*) as was believed earlier.



Pygmy hog (*Porcula salvania*) – a captive female



PHCP Research & Breeding Centre, Basistha



Pygmy hog sow with babies



A 10 days old pygmy hog baby



Female entering nest with her young



Pre-release area at Potasali, Nameri



A baby hog at Basistha



Solar power fence at Potasali



Hogs arrive in Sonai Rupai for release



A released hog caught in camera trap



Released hogs and wild elephants



Community awareness event near Manas



Bengal florican



Training for Assam Forest Dept. staff

Field research, surveys and extension activities

In addition to the concluded first phase of radio-tracking studies in Manas, a wide ranging survey of known and suspected sites of pygmy hog distribution has been carried out. Grassland ecology studies have been carried out in collaboration with Gauhati University to provide grassland management guidelines for conservation of natural floral and faunal diversity of the grassland habitats. Under a Darwin Initiative award, PHCP expanded its capacity building and community conservation initiatives in Manas and selected reintroduction sites. The capacity building and training programmes targeting frontline protection staff in the field have been conducted while the rural communities in the fringe areas of the parks are being encouraged to undertake conservation initiatives. The project has established a system for monitoring of released pygmy hogs and their grassland habitat and is exploring potential sites for future reintroductions.

Authors Affiliations :

1. Durrell Wildlife Conservation Trust Pygmy Hog Conservation Programme, Indira Nagar, Basistha, Guwahati 781029
2. Ecosystems- India-Rare & Endangered Species Conservation Unit (RESCU), PHCP, Indira Nagar, Basistha, Guwahati 781029
3. Aaranyak - Threatened Species Recovery Programme, 13 Tayab Ali Byelane, Bishnu Rabha Path, Guwahati - 781028

Pygmy Hog Conservation Programme, Indira Nagar, Basistha, Guwahati 781029

About the Author :



Dr Parag Deka with Pygmy Hog, Guwahati, Assam. Since 1997, he is involved with the Pygmy Hog Conservation Programme (PHCP) implemented in Assam by local project partners - Aaranyak and EcoSystems-India. PHCP is a collaborative project of Durrell Wildlife Conservation Trust, IUCN/SSC Wild Pig Specialist Group, Forest Department - Govt. of Assam and Ministry of Environment, Forest & Climate Changes - Govt. of India. PHCP is working towards the conservation breeding, habitat restoration and reintroduction of critically endangered Pygmy Hog (*Porcula salvania*) in India particularly in Assam since 1996. He began his career as Project Officer PHCP and was engaged in veterinary support, healthcare, management and breeding of captive hogs. Later, Project Manager, he became involved in habitat restoration, reintroduction and monitoring of reintroduced hogs in addition to previous responsibilities. Recently, he has taken the responsibility of leading the programme as Project Director. He was also involved as consultant in Captive Elephant Healthcare Programme of EcoSystems-India in Assam, sponsored by Elephant Sanctuary, Tennessee, USA (2002-03) and Assam Haathi Project, a project human-elephant conflict; North of England Zoological Society, Chester Zoo, and EcoSystems-India (2004 to 2012). He is a member of IUCN/SSC Wild Pig Specialist Group also received Disney Conservation Hero" 2017, by Disney Conservation Fund, Florida, USA.



Co-author Dr Goutam Narayan main interest is conservation of critically endangered animals like Pygmy Hog and Bengal Florican. He began his career in 1980 at BNHS first working on vultures under Dr Salim Ali and went on to become BNHS Conservation Officer in 1991. In 1994 he trained at Durrell Academy and initiated Pygmy Hog Conservation Programme. In 2015, he became the first Indian to receive the Harry Messel Award for Conservation leadership. He has also received the 2014 RBS Earth Heroes Award and is adviser to the Government on human - elephant conflict mitigation.

OBSERVATIONS ON VULTURE SPECIES IN A PART OF KAILASH SACRED LANDSCAPE, INDIA.

Ajaz Hussain¹, Dr. G. S. Rawat², Dr. B. S. Adhikari³

Wildlife Institute of India, Chandarbani, Dehradun, Uttarakhand, 248001

ABSTRACT

We conducted a survey of Vultures in the lower part of Kailash from August 2013 to June 2014. Direct observations were made to record the roosting sites, nesting sites, and number of species. We did focal group discussion with the community to understand the conservation attitudes of people. Seven species of vulture sighted during the survey in the landscape of Indian part of Kailash, of which three species are listed as critically endangered, one vulture species listed as threatened and the remaining three listed as near threatened. Congregations of vultures and nest sites of two vulture species were recorded during the study period. We found that Vultures mostly roost and nests in chir pine and deodar forest patches. The abandon carcasses of cattle appear to be the main source of food for vultures. The abandon method of cattle carcasses of local community is beneficial to vulture's survival in the landscape.

INTRODUCTION

Vultures are nature's most efficient scavengers, providing an array of ecosystem services. They are uniquely adapted to scavenging lifestyle (Martinez, 1997; Baral, 2002; Giri, 2002). Till few decades ago vultures were widespread and common in Asia. However, most of them have undergone rapid and catastrophic population decline during last two decades owing to accidental poisoning by Diclofenac an anti-inflammatory drug in domestic cattle carcasses (Virani, 2001; Baral, 2002; Prakash, 2003; Green, 2004; Oaks, 2004; Shultz, 2004). Of the 23 species of vultures found worldwide, nine species are found in the Indian sub-continent. Of these, five belong to the genus *Gyps* while the others are monotypic. Until recently, the white-rumped vulture (*Gyps bengalensis*), red headed vulture (*Sarcogyps calvus*), Egyptian vulture (*Neophron percnopterus*), Himalayan griffon (*Gyps himalayensis*), slender-billed vulture (*Gyps tenuirostris*), and cinereous vulture (*Aegypius monachus*) were the most common species in India.

This communication deals with ad libitum sightings of vulture species in various part of Pithoragarh district, Uttarakhand during 2013-2014. Seven vulture were species recorded in the study area during the survey. Of which five belong to the genus *Gyps*. Three *Gyps* vultures, namely the white-rumped vulture (*Gyps bengalensis*), long-billed vulture (*Gyps Indicus*), slender billed vulture (*Gyps tenuirostris*), are resident, and the remaining two viz., cinereous vulture (*Aegypius monachus*), and himalayan griffon (*Gyps himalayensis*), are largely wintering species (Prakash et al. 2003). White-rumped vulture (*Gyps bengalensis*), and long-billed vulture (*Gyps Indicus*) were abundant across large parts of India until the 1990s. The slender billed vulture (*Gyps tenuirostris*), which was not distinguished as a separate species

from long-billed vulture (*Gyps indicus*) until recently (Rasmussen 2001). It was also locally common in north and north-eastern parts of the Indian Subcontinent (Prakash, 1999, Baral, and Gautum, 2002). Vultures belongs to two families, viz., Cathartidae comprising new world vultures, and Accipitridae comprising the old world vultures. Though, the new world vultures (Condor) are distantly related to the old world vultures, yet they are similar in appearance and habits. They are all obligate scavengers, feeding primarily on the carcasses of large ungulates and nesting and roosting, often colonially, on cliffs or on the trees. They use economical soaring flights to travel long distances from nest and roost sites in search of ungulate carcasses (Giri, 2002). Vultures are believed to have evolved parallel with large herds of migratory ungulates, feeding on the remains of sick, injured and depredated individuals (Oaks, 2004; Green, 2004). Ecological information on these species including distribution and abundance is needed in order to develop conservation and restoration plans, management, recommendations, and understanding population dynamics (Martinez, 1997; Prakash, 2001; Pain, 2003). While working on a landscape level conservation and development project in Indian part of Kailash Sacred landscape, we recorded occurrence of vulture species systematically. In this paper, we present the brief natural history observations on the vulture species. Objectives of the study were to record abundance of vulture species and identify the roosting and nesting sights of vulture.

MATERIAL AND METHODS

The observation on vultures were made in the human dominated landscape in Gangolihat and Bin Block of District Pithoragarh, eastern Uttrakhand, located between Latitude: 29.5829° N, Longitude: 80.2182° E with an altitude ranging from 400m to 7000m asl. This area fall under Indian part of Kailash Sacred Landscape (KSL). The study area characterized by interspersed human habitation, agriculture fields and wide variety of vegetation types including sub-tropical, temperate, sub-alpine and alpine. During field work, regular visits were made in two sub-watersheds of the study area. During the sighting of vulture, we recorded place of sighting, name of species, number, habitat, and other natural history. Vulture species were identified with the help of Binoculars (8X40) and existing identification key (Grimmett, 2000).

OBSERVATIONS

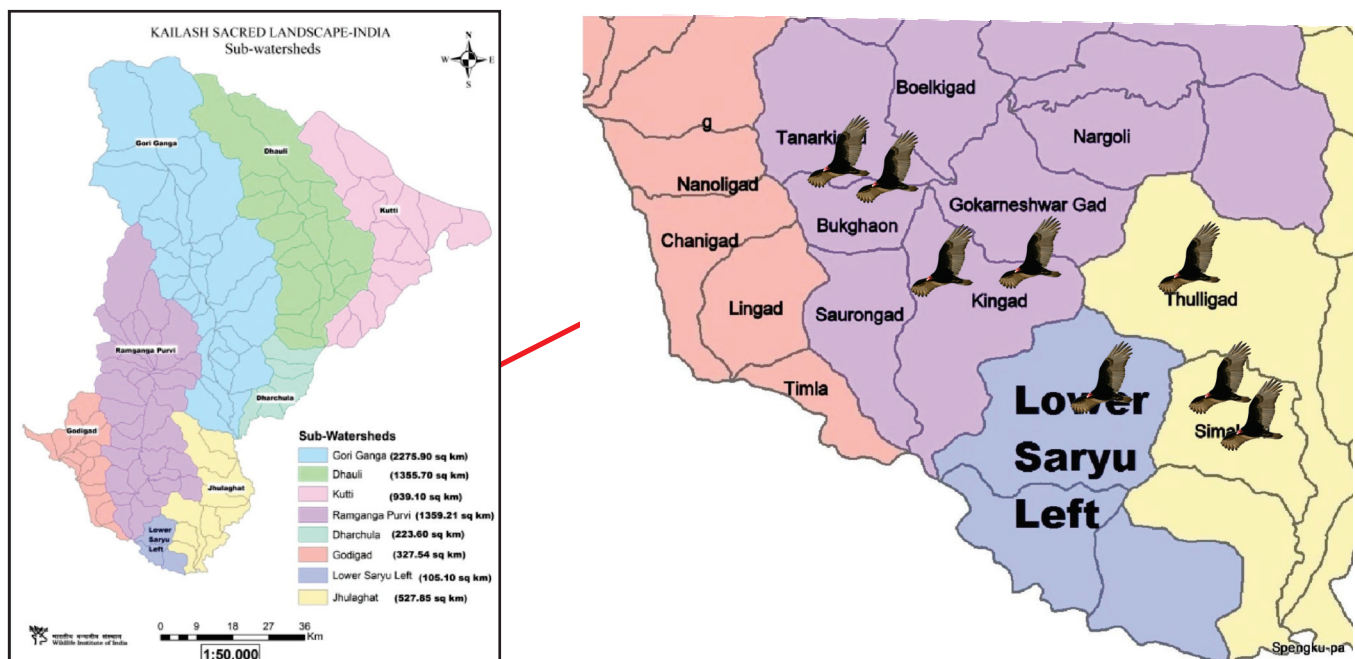
During the field survey in Pithoragarh district, bearded vulture (*Gypaetus barbatus*), himalayan griffon (*Gyps himalayensis*), slender-billed vulture (*Gyps tenuirostris*), egyptian vulture (*Neophron percnopterus*), white-rumped vulture (*Gyps bengalensis*), red-headed vulture (*Sarcogyps calvus*), and cinereous vulture (*Aegypius monachus*), were recorded in selected Micro-watershed of Pithoragarh district. During the field days, vulture congregations and nest sites were recorded. Since availability of food from native wild Ungulates is limited in the landscape, carcasses of domestic livestock form the bulk of available food for the vultures. Egyptian vulture mostly was observed feeding on garbage dumps with jungle crows and steppe eagle. During the study period, we found nine carcasses of cattle. On one occasions, 26-

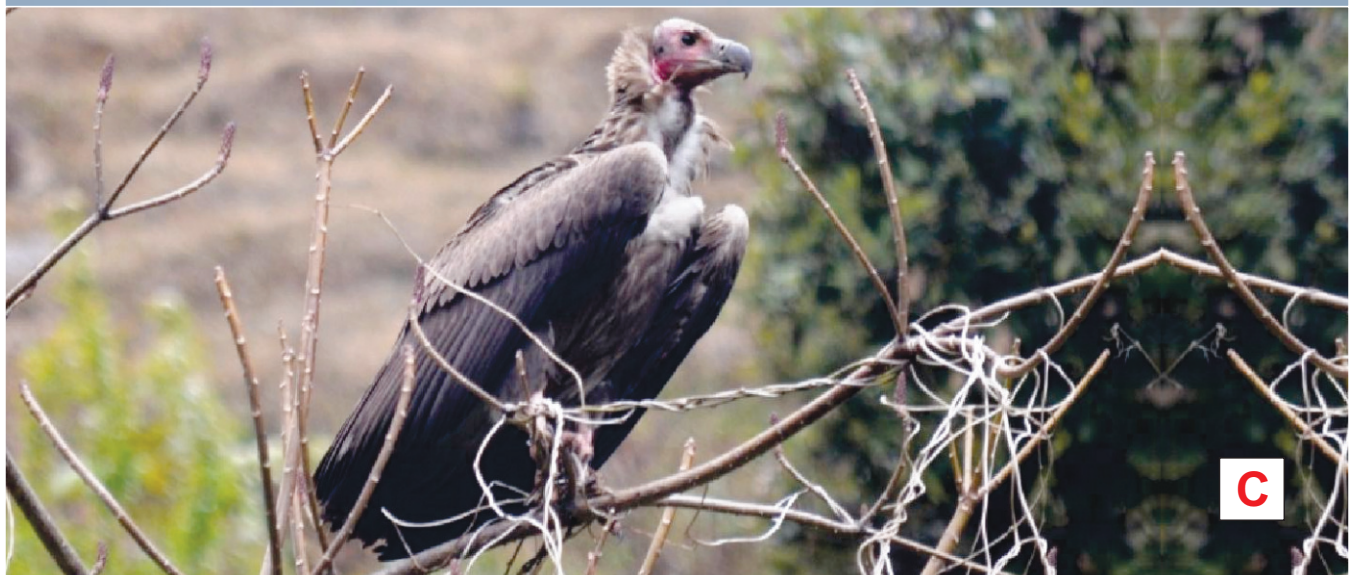
Himalayan griffon were seen feeding with two white rumped, two king vulture and one bearded vulture on 14 April 2016 at Khitoli village in lower Saryu watershed. According to the local people, vultures were more frequently seen in the past, but during last few decades the population of vulture is decreasing in the landscape. The local communities feel that lower sightings of vultures could be due to be the ban on sacrifices of buffaloes at temples. The local people in the landscape do not kill vultures and do not hurt them. Table 1, and Figures 1& 2 showing the details of Sighting, map of the study area and picture of recorded species.

Table 4: Sightings of vulture species in lower part of Pithoragarh, Uttarakhand.

Vulture species	Locality	No of sightings	Month	Habitat	No of nests located
Egyptian vulture	Hat-kalika and Boel, Gokarneshwar Gad	12	Feb and March	Pine, Grassland and Deodar Forest	2
Slender-billed vulture	Simalgad	1	March	Deodar Forest	0
Red-headed vulture	Hat-kalika, Boel, Gokarneshwar Gad and Simalgad	8	Feb, March and May Sep	Grassland, Pine and Deodar Forest	0
White-rumped vulture	Simalgad	1	April	Deodar Forest	0
Bearded vulture	Hat-kalika, Gokarneshwar Gad, Boel, and Simalgad	11	Mar, April, May, Sep, and Dec	Rangelands, rocky terrain and steep slopes.	1
Cinereous vulture	Hat-kalika, Gokarneshwar Gad and Simalgad	13	Mar, April, May, Sep, and Dec	Pine and Deodar Forest	0
Himalayan Griffon	Hat-kalika, Boel, Gokarneshwar Gad and Simalgad	16	Mar, April, May, Sep, and Dec	Rocky terrain and steep slopes. Pine and Deodar Forest	3

Fig.2 Images of Vulture species sighted in Indian part of Kailash Sacred Landscape







Vulture Sighted in Kailash Sacred Landscape: (A) Bearded vulture (B) Himalayan griffon (C) White-rumped vulture (D) Red headed vulture (E) Egyptian vulture (F) Cinereous vulture

Out of nine species of vultures found in India, seven species are found in the study area. According to Red List of IUCN, white-rumped vulture, red-headed vulture, and slender-billed vulture are listed as "Critically Endangered", Egyptian vulture listed as Threatened, and the bearded vulture, Himalayan griffon, cinereous vulture are listed as Near Threatened. The Himalayan griffon was found to be the most abundant (n=16) species followed by cinereous vulture (n=13), Egyptian vulture (n=12), bearded vulture (n=11), redheaded vulture (n=8), white-rumped vulture (n=4), and slender-billed vulture were sighted only once (n=1). We found that vultures mostly preferred trees such as chir pine (*Pinus roxburghii*), deodar (*Cedrus deodara*) and silk cotton tree (*Bombax ceiba*) for perching. We recorded nests of only two vulture species during the study period viz. Himalayan griffon and bearded vulture. The study area has adequate cover of chir and deodar trees that provide nesting and roosting habitat for vultures. Forest patches owned by the local communities called Van Panchayat, which is, devote to deity, a way to protect the forest. Such laws are help in protecting the habitat for many species in the landscape. Hindu community dominates the landscape. Laws and religion forbidden slaughtering of cattle, so eating beef is very rare in this landscape. We found that communities of Kailash abandon old aged cattle and carcasses of cattle. Which forms the bulk supply of food for the species' diet. Except stray dogs, there is no other natural competitor for vultures in the landscape. The population of stray dogs increasing in many areas of the landscape, which is an issue for wildlife as well as human health. From conservation point of view, the habitat of the study area is suitable for vultures. Invasive species, sporadic fire and cattle grazing are the conservation issues. Together, these lead to habitat loss and create negative effect on available safe nesting, roosting sites and prey base for the Vulture in the study area. The Vultures need a long-term study in future to facilitate their conservation management.

CONCLUSION

We sighted seven species of vulture of which three species were listed as Critically Endangered, one species listed as Endangered and three listed as near threaten. We found few nesting and roosting sights in the study area. We found that vultures mainly used chir pine and deodar trees for roosting and nesting. The system of devote forest patches to deity plays important role for protecting the habitat for local wildlife in the area. Religious belief plays important role in providing bulk of food for vultures as the ban on slaughtering of cattle on temples and prohibition of eating beef make the community to abandon the cattle carcasses. The increasing population of stray dogs is a matter of concern for the local wildlife as well as human health risk in the landscape.

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REFERENCES

- Baral, H. R. (2002) Collapse of vulture population in Lumbini. *Danphe* 11(4): 4–5.
- Baral, N. and Gautam, R. (2002) Status of White rumped Vulture *Gyps bengalensis* in Rampur Valley, Nepal. *Oriental Bird Club Bull.* 36: 46–48
- BirdLife International (2001) *Threatened birds of Asia: the BirdLife International Red Data Book*. Cambridge, U.K.: BirdLife International
- Giri, J. B. and GC, S. (2002) Study of vultures in western lowland Nepal. *Oriental Bird Club Bull.* 36: 11–13.
- Grimmett, R. (2000) *Birds of Indian sub-continent*. New Delhi: Prakash Book Depot.
- Green R. E., Newton, I, Shultz, S., Cunningham, A. A., Gilbet, M., Pain, D. J. and Prakash, V. (2004) Diclofenac poisoning as a cause of vulture population declines across the Indian subcontinent. *J. Anim. Ecol.* 41: 793–800.
- Martinez, F., Rodriguez, R. F. and Blanco, G. (1997) Effects of monitoring frequency on estimates of abundance, age distribution, and productivity of colonial Griffon Vultures. *J. Field Ornithol.* 68(3): 392–399.
- Oaks, J. L., Gilbert, M., Virani, M. Z., Watson, R. T., Meteyer, C. U., Rideout, B. A., Shivaprasad, H. L., Ahmed, S., Chaudhry, M. J. I., Arshad, M., Mahmood, S., Ali, A. and Khan, A. A. (2004) Diclofenac residues as the cause of population decline of vultures in Pakistan. *Nature* 427: 630–633.
- Pain, D. J., Cunningham, A. A., Donald, P. F., Duckworth, J. W., Houston, D. C., Katzner, T., Parry-Jones, J., Poole, C., Prakash, V., Round, P. and Timmins, R. (2003) Causes and effects of temporal and spatial declines of *Gyps* vultures in Asia. *Conserv. Biol.* 17(3): 661–671
- Prakash, V. (1999) Status of vultures in Keoladeo National Park, Bharatpur, Rajasthan, with special reference to population crash in *Gyps* species. *J. Bombay Nat. Hist. Soc.* 96: 365–378.
- Prakash, V. (2001) Status and distribution of vultures in India with special reference to the population crash in *Gyps* species. Pp. 4–6 in T. Katzner and J. Parry Jones (eds) *Reports from the workshop on Indian Gyps vultures, 4th Eurasian congress on raptors, Sevilla, Spain, September 2001*. Seville, Spain: Estación Biológica Doñana Raptor Research Foundation.
- Prakash, V., Pain, D. J., Cunningham, A. A., Donald, P. F., Prakash, N., Verma, A., Gargi, R., Sivakumar, S. and Rahamani, A. R. (2003) Catastrophic collapse of Indian white-backed *Gyps bengalensis* and long billed *Gyps indicus* vulture populations. *Biol. Conserv.* 109: 381–390.
- Rasmussen, P. C., and S. J. Parry. (2001). The taxonomic status of the Long-billed Vultures *Gyps indicus indicus*. *Vulture News* 44: 18–21.

Shultz, S., Baral, H. S., Charman, S., Cunningham, A. A., Das, D., Ghalsasi, G. R., Goudar, M. S., Green, R. E., Jones, A., Nighot, P., Pain, D. J. and Prakash, V. (2004) Diclofenac poisoning is wide spread in declining vulture populations across the Indian subcontinent. *Proc. R. Soc. Lond. B (Suppl.)*: doi10.1098 / rsbl.2004.0223.

Virani, M., Gilbert, M., Watson, R., Oaks, L., Benson, P., Kham, A. A., Baral, H. S. and Giri, J. B. (2001) Asian vulture crisis project: field results from Pakistan and Nepal for the 2000–2001 field season. Pp. 7–9 in T. Katzner and J. Parry-Jones (eds) *Reports from the workshop on Indian Gyps vultures, 4th Eurasian congress on raptors, Sevilla, Spain, September 2001*. Seville, Spain: Estación Biológica Doñana Raptor Research Foundation.



About the Author :

Mr. Ajaz Hussain is a final year PhD student at Wildlife Institute of India. His doctoral research investigates the distribution of mammals, pattern and possible mitigation measure of human wildlife conflict in Himalayas. He holds an M.Sc. in wildlife sciences from Aligarh Muslim University and a General B.Sc. from Govt Degree College Kargil, Ladakh Kashmir University.



About the co-author's :

Dr. Gopal S. Rawat is currently serving as Dean, Faculty of Wildlife Sciences at the Wildlife Institute of India, Dehradun. His areas of interest include alpine ecology, interdisciplinary studies and biodiversity conservation in the Himalayan region. He has published over 250 research papers and articles on these themes and supervised about 30 Ph. D. and 15 masters students. He is a Fellow of National Academy of Sciences, India (Allahabad 2004); member of IUCN (SSC) Orchid and Medicinal Plant Specialist Groups. He is also one of the Executive Councillors of Integrated Mountain Initiative (IMI).



Dr. Bhupendra S. Adhikari obtained his doctoral degree from Kumaun University, Nainital on high altitude forest dynamics in the year 1992. His research interests lie in the research on phytodiversity, community analysis, conservation of orchids and medicinal plants, the impact of climate change on the dynamics (structural and functional attributes) of timberline ecotone and response of herbaceous plant communities on snow water melt. Apart from this, he involved in first ever trans-boundary project i.e. Kailash Sacred Landscape project between China, India and Nepal in the Himalayan region and trained to establish GLORIA sites and exposed to alpine Trans-boundary Landscape of Germany and Austria under mentorship programme in the project. He took part in Scientific Expedition to Nanda Devi in the year 2003 and 2015 to observe the vegetation changes over a decade.

RED-HEADED TROGON, A RARE BIRD IN NANDHAUR WILDLIFE SANCTUARY

Chandra Shekhar Sanwal¹, Parag Madukar Dhakate², Kapil Kumar Joshi³

¹Indian Forest Service, Deputy Conservator of Forest,
Nandhaur Wildlife Sanctuary Haldwani Forest Division, Haldwani, Nainital (Uttarakhand)
Email: chandra.sanwal@gmail.com

The red-headed trogon (*Harpactes erythrocephalus*) is a species of bird in the family Trogonidae. The trogons are birds belonging to only one family, the Trogonidae. The word *trogon* refers in Greek for "nibbling" and denotes the fact that these birds gnaw holes in trees to make their nests. They are the only type of birds with a heterodactyl toe arrangement. Heterodactyly is an arrangement of digits in birds with two toes facing forward (digits 3 and 4) and two back (digits 1 and 2), (Botelho, 2014).

MORPHOLOGY AND HABITAT

Trogons have soft, often colourful, feathers with distinctive male and female plumage. The red-headed trogon is on average 34 cm (13 in) in length. The male has a red head and breast, a unique feature in the Trogon group. The female resembles the Diard's trogon without a speckled undertail (Forshaw et al 2009). The red-headed trogon prefers upland forests. In the Himalayan foothills it lives in dense broad-leaved forests and in tropical and subtropical zones the species inhabits mostly mixed bamboo forests. In Southeast Asia, this species frequents broadleaved evergreen forests from 300m up to 2600m (del Hoyo et al. 2001).



FEEDING HABIT AND BEHAVIOR

Red-headed trogons are most active in the early hours of the morning and at night, when they fly on the edges of forest clearings in pursuit of flying moths (Robinson, HC (1928). They feed on insects and fruit, and their broad bills and weak legs reflect their diet and arboreal habits. Although their flight is fast, they are reluctant to fly any distance. In most regions, the red-headed trogon is sedentary. Red-headed trogons feed primarily on insects and their larvae found in the foliage, on tree branches or in mid air. They also eat leaves and fruits. Some food items include green orthopterans, stick-insects, cicadas, millipedes, flies, beetles, centipedes, woodlice and moths (del Hoyo et al. 2001). Prey is almost always obtained on the wing (Collar, N.J. (2001). The most commonly employed foraging technique is a sally-glean flight, where a trogon flies from an observation perch to a target on another branch or in foliage. Once there the birds hovers or stalls and snatches the item before returning to its perch to consume the item. it is also used to pluck fruit from trees.



They nest in holes dug into trees or termite nests, laying 2–4 white or pastel-coloured eggs. Red-headed trogons can most often be found perched on a shaded branch waiting for prey, alone or in pairs. Flight between trees is often sluggish and very low, only a few meters above the ground (Forshaw, and Gilbert 2009). Trogons are generally inactive outside of infrequent feeding flights. Their lack of activity is possibly a defence against predation; trogons on all continents have been reported to shift about on branches to always keep their less brightly coloured backs turned towards observers. Trogons have reportedly been preyed upon by hawks and predatory mammals (Wheelwright, 1983).

BREEDING

Trogons are territorial and monogamous. Males attract females by singing (Collar, N.J. (2001). Red-headed trogons usually nest in natural tree cavities, 1.5 to 5m above the ground. The entrance hole is generally wide. Indeed, the pair will enlarge narrow entrances, and occasionally, will excavate the entire nesting cavity. Birds have been seen using old nesting holes of woodpeckers and barbets (Foreshaw and Gilbert, 2009).

Nests are dug into rotting wood or termite nests. Nests are dug with the beak, incidentally giving the family its name. Nest digging may be undertaken by the male alone or by both sexes. Between two and four eggs are laid in a nesting attempt. Red-headed trogons lay round, cream coloured, glossy eggs, although



they get increasingly dirty during incubation. Both parents incubate the eggs (Collar, N.J. (2001). In Northern India, eggs are laid between mid April and mid July, with a peak in May and June (Baker, ECS (1934). Both sexes contribute to the nesting process, namely excavating, incubating the eggs, brooding and feeding the offspring. However females spend more time brooding, since they alone incubate and brood at night. Males on the other hand contribute more to providing the chicks with food (Steward and Pierce, 2011).

RELATIONSHIP WITH HUMANS

Trogons are considered to be "among the most beautiful of birds", Collar, N.J. (2001) but they are also often reclusive and seldom seen. Little is known about much of their biology. Red headed trogons are nevertheless popular birds with birdwatchers in Nandhaur Wildlife Sanctuary, and there began birdwatching ecotourism industry in Nandhaur Wildlife sanctuary when the fourth Uttarakhand spring bird festival was organized at Nandhaur wild life sanctuary. The Nandhaur region is a very important component of "Shiwalik and foot hills" landscape of the country which is popularly known as "Terai-arch"

landscape. On account of its adequate ecological, faunal, floral, geomorphological, natural and zoological significance for the purpose of protecting, propagating and developing wildlife and its environment, Nandhaur wildlife sanctuary with an area of 269.956 Km² was notified in 2012, located in the Nainital, Champawat and partly in Udham Singh Nagar districts of Uttarakhand State. The global population size has not been quantified, but the species is reported to be fairly common to uncommon (del Hoyo et al. 2001). Forest loss is the major cause of the decline of the species. In such conditions, new approaches for improving bird habitat and to restore the avifaunal diversity of the region by providing suitable floral composition and structure have been envisaged through the concept of "Avian Zone" in the Haldwani Forest Division.



REFERENCES

1. Botelho, João Francisco; Smith-Paredes, Daniel; Nuñez-Leon, Daniel; Soto-Acuña, Sergio; Vargas, Alexander O. (2014-08-07). "The developmental origin of zygodactyl feet and its possible loss in the evolution of Passeriformes". *Proceedings of the Royal Society of London B: Biological Sciences*. 281 (1788): 20140765.
2. Forshaw, JM; Gilbert, AE (2009). *Trogon: A Natural History of the Trogonidae*. Princeton, New Jersey: Princeton University Press
3. delHoyo, J; Elliot, A; Sargatal, J; Collar, NJ (2001). *Handbook of the Birds of the World (Vol. 6 Mousebirds to Hornbills. Family Trogonidae (Trogonidae).ed.)*. Barcelona: Lynx Edicions. pp. 80–129.
4. Forshaw, JM; Gilbert, AE (2009). *Trogon: A Natural History of the Trogonidae*. Princeton, New Jersey: Princeton University Press.
5. Robinson, HC (1928). *The Birds of the Malay Peninsula (Vol. 2. The Birds of the Hill Stations.ed.)*. London: Witherby
6. Wheelwright N. T. (1983). "Fruits and the Ecology of Resplendent Quetzals" (PDF). *Auk*. 100 (2): 286–301.
7. Baker, ECS (1934). *The Nidification of Birds of the Indian Empire (Vol.3. ed.)*. London: Taylor and Francis.
8. Steward, JS; Pierce, AJ (2011). "Breeding biology of Orange-breasted (*Harpactes oreskios*) and Red-headed (*H. erythrocephalus*) trogons in KhaoYai National Park, Thailand". *Journal of Field Ornithology*. 82: 175–183.
9. Collar, N.J. (2001). "Family Trogonidae (Trogonidae)", pp. 80–129 in del Hoyo, J.; Elliot, A. & Sargatal, J. (eds.). (2001) *Handbook of the Birds of the World, Vol. 6 Mousebirds to Hornbills*. Lynx Edicions, Barcelona, Spain. ISBN 84-87334-30-X



About the Author :

Chandra Shekhar Semwal, IFS, is from the 2010 Batch. He has passion and keen interest in field of Natural Resource Management and Bio-diversity Conservation. He was DFO, Haldwani, Nandhaur Wildlife Sanctuary and presently posted as Director Herbal Research and Development Institute Mandal, Gopeshwar, Chamoli.

THE HIGHLANDS OF CENTRAL INDIA

Mathen 'Rajeev' Mathew

Wildlife Consultant

6-3-912/1, Kapadia Lane, Rajbhawan Road, Somajiguda, Hyderabad - 580082

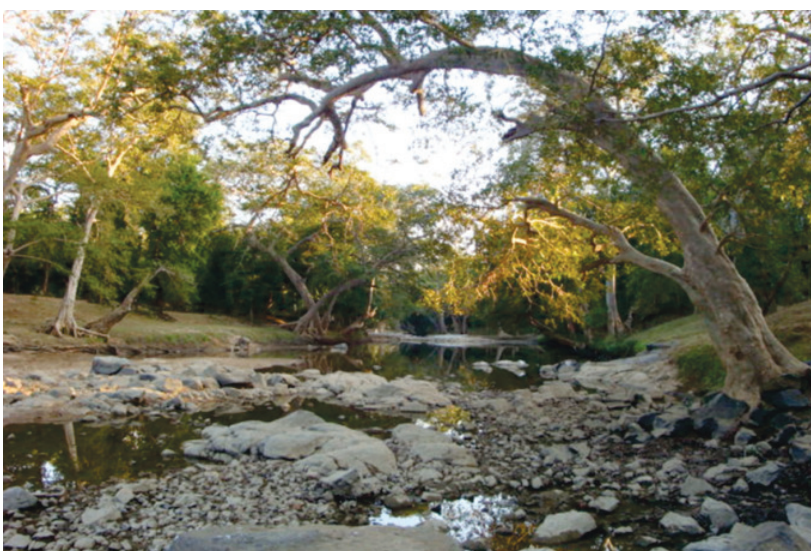
Email : wleco.rm@gmail.com

It was several years ago that I first visited the Central Indian Highlands where the tall stands of mixed deciduous forest interspersed with bamboo flourish. It holds a vast number of wild animals, breathtaking views; landscape crisscrossed with nullahs and streams and mighty rivers; and game trails running off into the verdant land. The moist evergreen forests of the Western Ghats and the semi moist and the moist deciduous forests of the Eastern Ghats have never elicited in me the warmth and excitement I have for the forests of Central India – especially those of Chanda.

My childhood fantasies of these forests were triggered by hunter-naturalists like Best, Stewart and famously by Dunbar Brander whose accounts romanticized the parched land, firing my imagination.

Coming as I do from a family where hunting was a tradition, and guns and rifles a part of life; I was always drawn to the wilds. Therefore, the day I was invited to the lands trampled by my childhood heroes Best, Stewart and Dunbar Brander, and not much further away, the land of Mogli and Rudyard Kipling's Jungle, Sheeonee, captured in his Jungle Book; I grabbed the opportunity.

Reddy, an IFS officer had come to Hyderabad on study leave and we met at our common friend's office – another forest officer Dr. Murthy. Dr. Murthy and I go a long way; long before he was selected as a forest officer we used to bird watch together. The acquaintance between Reddy and me developed into friendship.



Reddy asked “Rajeev, are you interested to come up to Chandrapur for a day or two?” “Wow, sure, when?” was the reply and in a few days I was on my way to Chandrapur. The journey into the wilds of the Central Indian Highlands had begun!

My trysts with the Highlands of Central India were in the beginning from around the forests of Adilabad, which is close to home, where I spent some wondrous boyhood and adolescent years growing up.

My dad was an interior decorator and he would go to Adilabad to buy teak wood required for his business. I usually tagged along with him and while he got down to the business of buying wood, I would wander off into the jungle. The forests of Indanpally, Kaleda, Islampur and so many others were where I learned many a skill from the Gonds who live in these parts. The many tree and bamboo jungles and the tree lined streams were our playgrounds. The knotty buttressed boles of the Arjuna trees lining the streams made for easy climbing, and from branches overhanging the stream we would dive into the stagnant pools and splash around. By night these pools turned into waterholes for the denizens that quenched their thirst with tepid water. We were slightly better off, quenching our thirst with water drawn from an earthenware pot which cooled the water somewhat.

Many years have passed and the forests thinned, illicitly felled for the valuable timber, and the wildlife reduced by poaching to a shadow of their past glory. A far cry from what they were in the late seventies and early eighties. Up until the fifties and sixties there were man-eaters in residence in almost all divisions year round, another taking the place of the one that was gunned down to protect the people in a not-too-long a space of time. Today, most of those divisions then so plagued are bereft of the Tiger and the Leopard, once feared, revered and held in awe.

However, the Highlands of Central India have a way of endearing themselves to those that love the wilderness and its solitude. The pictures painted by the imaginations of a young boy's mind, etched into memory by the rambling and scrambling of boyhood and adolescence *amour vitae* was being relived again in the flesh as we passed the rolling landscape clothed in greens and browns.

Driving with Reddy through the forest of Chanda was a very treasured treat. Trees stood regal, proud and tall with bamboo growing willy-nilly. The sound of silence was deafening; and then the cicadas broke out into a shrill droning! The



orchestrated pauses, pregnant with anticipation of high pitched whining, would resume again. The brain

fever bird soon started from an almost inaudible prelude to a maniacal high pitched crescendo and then suddenly stopped; to resume all over again. Soon we were in Reddy's office.

Meetings were arranged, and after a very vibrant and exciting exchange of ideas I was welcomed into the team that was readying itself to follow a tiger that had taken away a man's livelihood in the form of a cow. The tiger needed the cow as much as the man did, only that it had to satiate its hunger, therefore killing the man's golden goose – so to speak.

We set off after the tiger with torches and a measuring tape – for it was long past daylight – to realize that we were after a tigress. The farmer lamenting his loss, for that cow was his support during the lean periods, and also when the crops failed; and that which more than buttered his bread when the sun shone on his fortunes.

We thus followed the tigress with the kill – a white milch cow to feed herself – into the benighted forest. We trailed her through some very rough terrain, crossing streams with ankle deep water flowing. Crossing over to the other side, we chorked on ahead, while the tigress walked on cushioned tiptoes, and noiselessly outpaced us. The walk through the forest, exhilarating as it was, brought into focus the many perils and the challenges faced by the people living there; eking out a living off the forests with its unique occupational hazards.

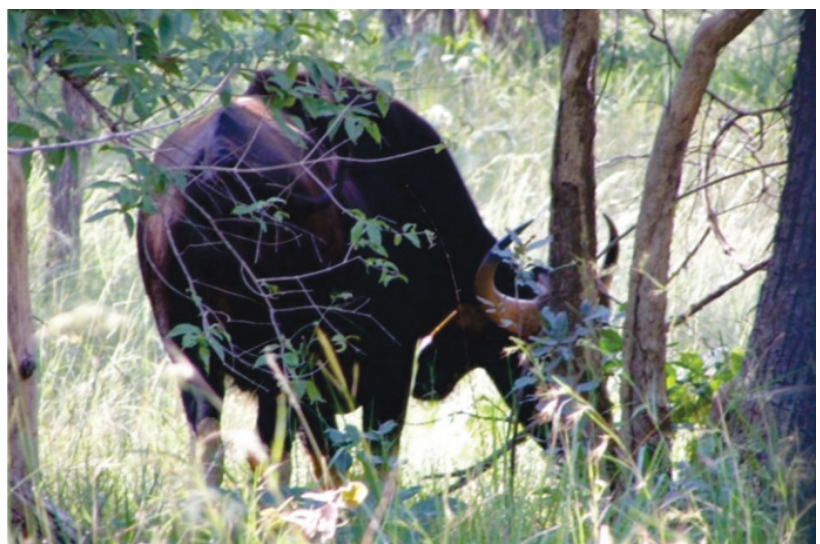
After the walkabout in the forests of Kothari, my next stop was the wildlife sanctuary and Tiger Reserve; the Tadoba Andari Tiger Reserve, which is in Chanda – now Chandrapur – of the Vidharba region of Eastern Maharashtra. Racing back through the stands of teak plantations that interspersed the rich and vibrant mixed and truly deciduous forest I reached my halt for the remaining part of the night at the CTPS – (Chandrapur Super Thermal Power Station) – Guesthouse; Herai.



As the clock rang out five-thirty welcoming the newborn day, there was a knock on the door; Patel was there with a beaming smile, brighter than the day around; a knowledgeable wildlife enthusiast and an engineer by profession Patel is a wiry, whippet of a man with boundless energy. We drove through the forest in his 4WD, bouncing merrily as we passed herds of Cheetal. We cruised by what looked like boulders, which then suddenly grew legs and sprang to life – the Gaur stood and watched us with expressive eyes – as we stopped to have a good 'decco' at them.

Uneventfully we drove toward the Kholsa resthouse, where the Field Director Takre had instructed the kamsana of the resthouse to prepare breakfast for us. As we journeyed to the Kholsa resthouse Patel wondered aloud where the wildlife had all gone. It was a Tuesday, and the park was closed for the tourists. We drove through all the open and sometimes off-limit portions of the park to see what could be seen, but the animals too seemed to have taken a hiatus. We labored through the forest, seeing pugmarks of Tiger, Red Wild Dog and many other animals. Both of us read the Jungle Lore written in the sand, to be overwritten with life stories uglyographically. It is an allusion, since in its scrawl that gets blown away, trampled upon and at times rained out are news and tales depressed again; these are the pieces of the jigsaw, telling stories past and the expectations of the future. Reading the signs and heading off in the direction of Kholsa our first stop, we came upon a camera trap. Later we learnt that a tiger took his own 'selfie' some few minutes before we arrived. This we got to know in the evening when all cameras were gathered together to collate information. The two of us and the 4WD also figured prominently in the camera trap some four-and-a-half minutes or so behind a tiger.

All the while our ears were pricked to pick any sound that might betray the presence of a carnivore. A honk from the peafowl came to us and we raced towards that place at a speedy twenty kilometers an hour, bouncing on the rutted road. We saw the peahen with



her head turned queerly. She was calling at the Crested Serpent Eagle sitting on a bough with one of its feet tucked underbelly. We longed to hear the spotted deer bark and the sambur bell, but with no such luck we drove on. We had still not reached the 7 O'clock mark, but it was getting warm.

The monotony of the drive was broken by a dainty barking deer crossing the road. Since the road was void of tourists, it stayed longer than usual before disappearing into the dense undergrowth. Squirrel like yellowish fawn coloured tree shrews scampered about. Very unlike the squirrels these have a serious disposition. Patel said “there are no giant squirrels in Tadoba.” A statement made, but I wondered why? Before we could ponder on this something red caught our eye. Soon the red broke out into a dozen strong Red Wild Dogs. They loped on for a while and then crossed our path to disappear into the tree forest. The family was looking for the meal of the day, and deciding on the menu.

With large Sambur bearing branches for antlers and showing themselves off, we drove on to rendezvous with Kholsa resthouse about 8 o'clock in the morning. The kamsana had prepared 'poha' the ubiquitous breakfast of the land. Eaten with the pickled spicy mango 'achhaar' and washed down with cups of tea, sweetened to excess, we fortified ourselves thusly.

We then took the road that led to Botazari. A once prosperous village; now evacuated so that the Deer and the Tiger may again roam their once pristine range. The fields left fallow developed into great meadows; the dwellings razed to the ground, overgrown with trees. The people themselves so displaced were compensated monetarily and land given in an adjoining area to begin their lives afresh.

The meadows looked vacant of any tenement until we got closer. The grass suddenly exploded into life, the surge caused by a multitude of Cheetal leaping about. It seemed as if that the meadow was on the boil with straw coloured grass and fawn coloured deer leaping, likening it to the merry bubbling of a large cauldron of sun-dried grass!



The Sun beating down with relentless heat; sweat vapourising before it could cool the skin, desiccating us, drawing every bit of moisture into the parched air around, we looked for a sanctuary that might alleviate our misery. A stand of lush evergreen tropical trees beacons to us as we eyed it covetously.

That shady patch belonged to a young Gaur. It looked at us as if to say “Clear off! My patch” so we very wisely drove off to another patch, not so dense, but then not defended either. The mottled shade and

the hot winds blowing over the meadows forced us to reconsider our stopover at Botazari where a Tiger was in residence. The swaying grass and the shimmering air dancing about told us that the tiger would not be coming back till it had cooled down, which could be late into the evening.

“It is very hot.” said Patel and I concurred. Tadoba is in the coal belt, and 10 O'clock in the morning was harsh, hot and hazy. Drinking water out of a bottle which was cool, we set off for Tadoba. Driving through the dry deciduous forest of massive teak, mahua, wild mango, many species of Terminalia and bamboo and several types of grasses, some called Tiger grass, some called Elephant grass depending on how high they grew.

“Let's go to Katazari” said Patel “many tigers and gaur...” he said after a pause, “Cubs also.” It was hot; desiccating heat sucking the life out of us, but Patel – tough as nails – did not mind it one single bit.

Lips dry, we reached for our bottles of water, now tepid. Wetting our lips more than quenching the thirst, we cantered on. A couple of turns in the road towards Tadoba and we reached Katazari; a signpost pointing us in its direction. A herd of Cheetal was on the road leading there, so we kept some distance and drove in their wake.

Katazari is an interesting place. Rocky, slightly hilly, boulder strewn with flat lands, it makes for a very tigerish spot. We drove around till we came to a pan. It had some water in it and shaded with shrubs. We kept looking and then we caught sight of something red. Minds racing about tigers; “Tiger!” We both exclaimed. It turned out to be a bunch of ochre-brown flush of a new sapling, probably mahua or some terminalia peeking from behind a screen of partly dried shrubs.



Disgusted with ourselves, we turned around, betting that all the tigers would have left for cooler parts. Before the thoughts dried out of our heads, a big tigress – later I learned that she was the Queen of Katezari – walked out onto the road with four, six to eight-month-olds in tow. Unconcerned – we were some forty or so yards away – she lay in the middle of the road while her cubs milled around. One worried her tail, and she half-snarled at it, but the feisty one kept at its tantrum while the other three suckled.



“Aah! Seen the tiger.” said Patel. “Yep, and four cubs too” I said. Patel made my day. It is not my wont to go and seek out tigers whenever I go to a forest known to

hold them, but when one is seen, it is appreciated. After all, these regal beasts are worth watching, even if they laze around and do nothing! Seeing cubs along with their rather ferocious mothers is a boon. I had wanted to know what the tigers' preferred prey was at Tadoba, and probably in the rest of Chanda.

I had looked into the scats of several tigers and most revealed that the tigers there preyed on gaur. Sambur was the next on the menu. Intriguing as it is, the tigers here seem a bit larger than ones seen elsewhere which do not prey on gaur, or occasionally so. Large prey requires large predators to bring down.

We then repaired back to the resthouse at Tadoba overlooking the lake. Crocodiles lazily basked with open, cream coloured mouths. The resthouse commissioned in 1907 stands well appointed as the Field Director's field office in the park. Takre and Reddy reached as we got in.

We discussed our finds. Takre was as surprised as any of us that we did not see any carnivores along the way except at Katezari that was closed to the average tourist. Sonone, the Round Officer was also perplexed. Reddy was optimistic that we would see something before the day wore off. We sat in the small lawn laid out prettily in front of the ancient resthouse. It commands the best possible view of the lake. We then moved to sit and face the lake and we digressed into inconsequential and rib-tickling small talk. We were all tired of the scientific, bureaucratic and management-of-wildlife talk.

The kamsana had better sense and lunch was served. We then realized how hungry we were. We devoured the food placed before us in pin-drop silence. The only sounds were of the merry crackling of papads in each of our plates. Cool water from the refrigerator drunk, we were a satiate lot.

A half hour later, tea drunk, and biscuits eaten; we set off. Takre took us to a location that was the ancient fortress of the Gond rulers. Built completely of stone on a high precipice, it had the vantage, better than what was around. We then descended the hill fort down a gully, a route that was possibly the entrance and exit to this primitive fort. Well thought out, for in the rainy season it would have been a torrential, treacherous stream, that, for the next few months have pools of water with slippery moss growing over the boulders, and for the rest of the year, the smooth boulders polished annually by the torrents provided very precarious purchase for any enemy wanting to take the fort.

We stumbled and tobogganed our way down this evil gully. The vehicles had circumscribed the hillock and awaited our arrival. We then drove off to the place where the tigers roamed and the gaur wallowed. It was a dank and rank smelling puddle enlarged into a wallow by the cavorting gaur, which was also where the wild boar and the Sambur lolled about.

The long fingers of shadows of the hills told us that it was the time between the dog and the wolf, and as we left, the warble of the Tickell's blue flycatcher came wafting down in the gentle breeze.

I had to get back to the CTPS guesthouse for the morrow held the promise to take me to another bewitching land – Kanhargaon – which was another adventure.

The drive back to Herai guesthouse had its interludes where I saw the sloth bear; gaur again as they had gained the safety of the road. The two most common civet species of peninsular India crossed our jeep, the most common being the palm civet (toddy cat), and the small ring-tailed civet. A leopard bounded ahead, caught at the very farthest fingers of the headlights of the jeep purposely at low beam.

Herai guesthouse reached, I aroused the sleeping watchman to let me in. And as he went back to slumber, I couldn't catch a wink of sleep for the many things that had happened in a short twenty-four hours. Three hours or so later at 5 O'clock the driver came to pick me up. The watchman having been roused by me yet again; I had, in that short span of twenty-four hours disturbed his slumbers thrice. He must have wondered if I had the touch of the sun, really. Keeping his thoughts to himself and after bringing me coffee, he wandered off, while I bundled into the jeep and off to Kanhargaon.



About the Author :

Mathen 'Rajeev' Mathew is a Wildlife consultant and his core area of work is alleviating human animal conflicts, livelihoods and eco-restoration. He also is an R&D consultant for Tac Sim. He was a field Biologist with the Bom. Nat Hist. Soc. Later he was also the Hon. Treasurer of the Rowing Federation of India. He was an Expert Member of the combined state of AP and Telangana (Andhra Pradesh). He is an Expert member of the Telangana State Biodiversity board, he was also an Expert Member of the National Biodiversity Authority constituted for Red Sanders. He was also an expert knowledge partner with centre for Innovations in public systems, Hyderabad, (CIPS) for 'Developing' a comprehensive greening policy for Andhra Pradesh.

THE TIGER WOODS

Karan Singh Kotla

Naturalist & Wildlife Photographer
Currently @Bandhavgarh National Park
Email: kpsingh.548@gmail.com

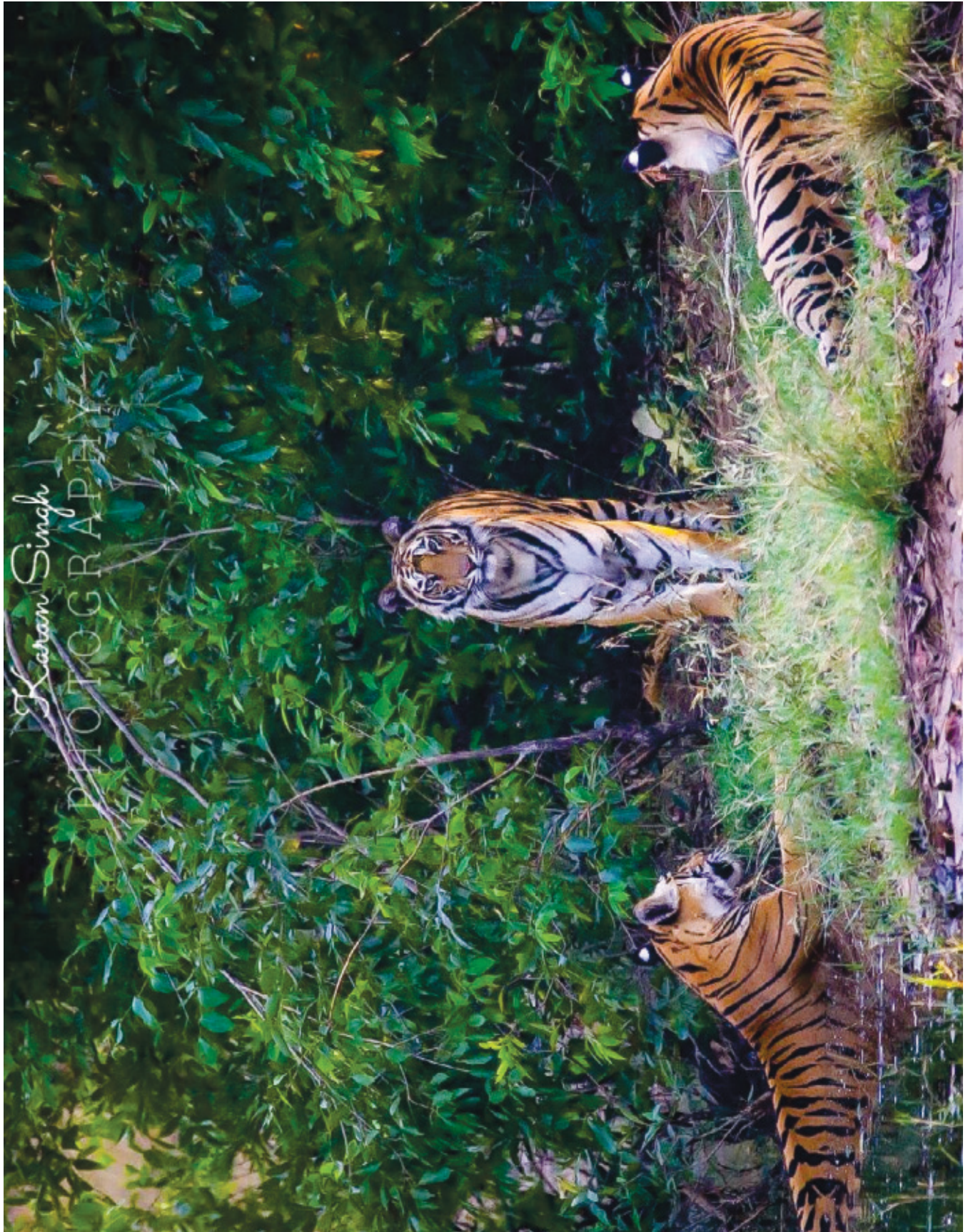
LOVE FOR WILDLIFE

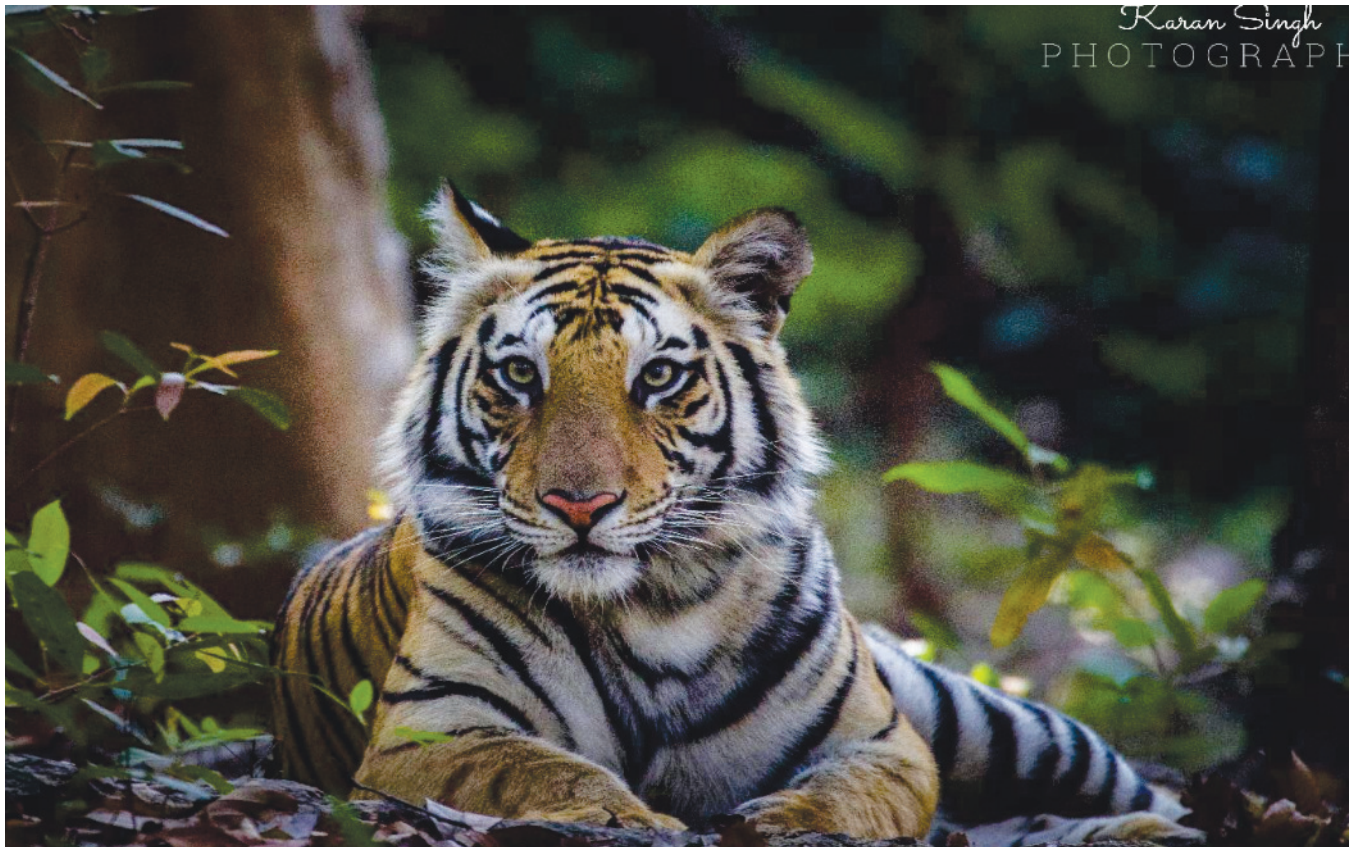
“People may doubt what you say, but they will believe what you do”. My love and compassion for wildlife got me to the Tiger woods: the land of Tigers “Bandhavgarh”. For me nature is not a place to visit. It is my home. Nature is our mother and we owe a lot to nature. My love for my mother nature, sound of birds, smell of flowers, the growling of tigers and the love for other animals made me who I am today. A Naturalist who loves nature deeply.

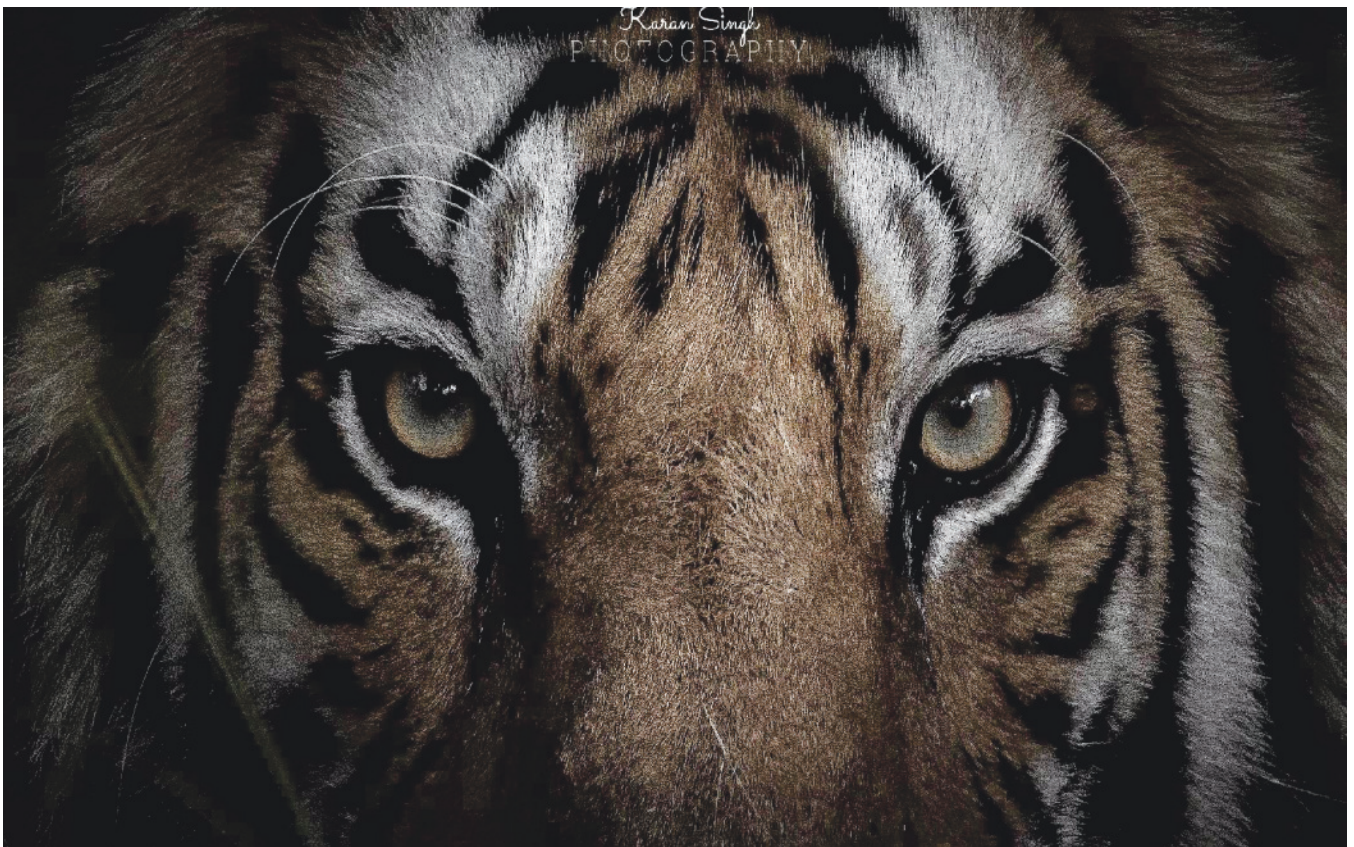


TIGER TIGER BURNING BRIGHT

My love for the largest cat species most courageous, powerful and dynamic animal got me to the land of tigers. Since childhood I was always attracted towards them and have visited many Tiger Reserves such as Sariska, Ranthambore, Kanha, Panna and many more. Tigers are the largest felines in the world and are known as solitary creatures.







BANDHAVGARH NATIONAL PARK

It is one of the most popular national parks in India located in Umaria district of Madhya Pradesh. I am here since last 5 years and really love the beauty of this place; it has a dense population of Tigers. The park derives its name from the most prominent hillock of the area, which was said to be given by Hindu lord Rama to his brother Lakshmana to keep a watch on Lanka. What makes it different from other parks is its population of Tigers; it has a large breeding population of Leopards and various species of Deer.

MY ROLE MODEL

I draw my inspiration from a very close family friend who is just like an elder brother to me Mr. Yashwant Bhinai. I would like to thank him, as he was the one who got me in this field, he not only inspired but also taught me lessons of naturalism.

LET'S SPEAK UP FOR WILDLIFE

Wildlife plays an important role in balancing the environment and provides stability to different natural processes of nature. It is very essential for each one of us to come forward and save our wildlife.



About the Author :

Karan Singh Kotla is a Naturalist and a keen wildlife photographer. Currently based in Bandhavgarh National Park. He loves nature and animals and loves to study them by capturing their photographs by observing wildlife closely. He has visited many national parks in India and has zeal towards protecting our wildlife. He is a very passionate naturalist and his area of interest is in big cats: Tigers in particular, but he can passionately talk about habitats, flora & fauna, birds and other species. With his love for the Tiger country and good conversations, Karan is a great company on safaris.

SNAKES AND HUMAN- WE NEED TO CO- EXIST

Baiju Raj

Director of Conservation Projects

Wildlife SOS

Email: baiju@wildlifesos.org

According to Linnaeus, 1758 classification Snakes are classified under class Reptilia, order Squamata and sub order Serpentes. The evolution of snakes was during Jurassic period about 150 million years ago. They evolved from lizards. Snakes really began to take over was about 95 million years ago after most of the dinosaurs died, which is towards the end of the Cretaceous period. Snakes are the late-arriving kind of reptile. (Karen Carr A.Y. 2005; Hsiang et al. 2015).

Snakes mostly live in burrows and trees. Some live in and near water bodies.

India is a home for around 275 species of snakes. For an easy identification they are mainly divided into three categories. Non- venomous, mildly- venomous and venomous. Out of these species, about 4% snakes are known to be deadly and may cause human mortality. Generally we call them as “Big Four” which includes cobras, kraits, Russell's viper and saw- scaled viper.

Snakes are one of the major predators of rodents- especially rats. In olden days people call them as “friends of farmers”. But now the system has changed. The tolerance levels of humans have gone down. They do not want to live or co- exists with any other forms of life that are equally important to maintain a balance in the environment. Snakes help to control rat populations and save us from several diseases. We should remember that all of us including animals and plants animals have a role to play in the ecosystem. When we disturb the system today, our future generations are going to suffer for their survival.

Deforestation, urbanization and floods are the major causes for the destruction of their homes. Snakes live around us; we only see them when they are in search of their food or due to some destruction to their habitats.

There are many instances when we try to explain people to co- exist with the snakes. The key to this is to take precautions like we do in our day today life to avoid accidents on road, from electricity, fire etc. If we can take care of these things why can't we use a torch light while going out in the night to avoid stepping on a snake? No snake is out there to bite us, they are in search of their food and shelter.

THREATS TO SNAKES

Snakes are worshipped in many parts of our country. In order to protect and conserve the nature, our ancestors related different animals with our culture and religious beliefs. But these religious beliefs slowly turned into superstitious beliefs. Bollywood movies and serials plays an important role in this. Snake charming in India is one among those. Snake charmers earn their livelihood using snakes. But the dark side of this are unknown to many of us. The snake charmers poach a snake from the forest and defang them by



Rat snake with mouth stitched rescued from a charmer © Mradul Pathak



© baijuraj m v cobra with pus filled in nose and mouth

© baijuraj m v



© baijuraj m v

End of life in a basket



© baijuraj m v End of lives in filthy cane baskets



Baiju- years back in snake awareness program



Baiju- at work today

using a thin metal wire. They split open the venom gland or sometimes pull the gland out completely. These all are done without any anaesthesia. These brutal practices are mainly carried out on venomous snakes, commonly on cobra. If it is a non-venomous snake like a rat snake or a python, they stitch their mouth to avoid bites. These snakes hardly survive for two to three months. Some are just thrown away to die silently. Apart from this snakes are also hunt/poached and traded for their venom, skin and meat.

There are many myths concerning snakes in our society. The most common myths are that snake drinks milk and dance on the sound of a flute ("bean"). The fact is that snakes are reptiles and not mammals, they neither drink milk nor they can digest milk. Snake charmers keep snakes thirsty for many days after they are defanged. The snake goes dehydrated in the baskets and when they are offered any liquid such as milk, they are forced to have it. The other fact is that snakes do not have external ears and cannot hear the sound produced by the flute but rather responds to the movements of the flute.

These defanged snakes develop pus in their mouth and are no more capable of hunting their own food. This is very cruel method and people support as a part of their superstitious belief. Snake venom is a protein and it is very useful for snakes for their survival. It helps them to hunt their prey and digest them. Once venom gland and fang is removed from a snake neither it can hunt nor digest its food. The snakes die hungry.

Every year with the help of forest department we confiscate number of snakes from temples and street. In 2016 and 2017 during Nag Panchami we rescued around 50 snakes which include 35 cobras, 10 rat snakes, a 3 red sand boa, 1 Indian rock python and 1 common sand boa. These cobras live maximum up to two months with lot of medication and care. Some rat snakes were with stitched mouths, and sand boas in dehydrated conditions. How do you get a good fortune or blessing from a suffering animal? Every rupee you give to the snake charmer is a motivation for him to poach more and more snake from the forest and destroy the ecosystem chain.

Remember- most of the snakes are protected under the Wildlife Protection Act of 1972 in India and snake charming is a punishable offence. Other offences also includes poaching of snakes for venom, meat and skin.

Please do not entertain these performers. Please inform to the concerned authority to save these speechless lives. These charmers not only destroy the ecosystem chain but also inject a slow poison of superstitious beliefs in our society.



About the Author :

Baiju Raj M V is Director Conservation Projects for Wildlife SOS and also a Member of IUCN, Crocodile Specialist Group. Working with snakes since childhood, handling snakes since 3 years of age. Father was a herpetologist who has conducted awareness programs in many countries.

BOOK REVIEW**Sugarcane Tiger;
The Phenomenon of Wildlife in Tarai Farmlands****Rahul Shukla****Assisted by Shrivridhi and Samridhi Shukla****Hard cover 400 pages with 36 coloured photographs****Publishers IBDC****Price ; Rupees 2500**

Bir Singh, a Sikh farmer of Pharsaiya village, near Dudhwa National Park, district Kheri-Lakhimpur of Uttar Pradesh was ploughing his field when he saw a tigress emerging out of a sugarcane patch. A pair of cubs trailed behind her. The cubs took fancy to the tractor and turned playful. Completely unafraid of tractor sounds, they came near to machine and began to run along it. The farmer dared not stop the tractor or accelerate its speed to run away. The drama continued for more than ten minutes. Then suddenly the mother stood up, called her cubs monosyllabically and entered a thicket where the cubs followed her.

This kind of nuisance is not uncommon in the Tarai farmlands of India. This region is characterized by vast stretches of dense jungle adjacent to the sugarcane crops. There is no buffer zone between the jungle and cultivation. Humans and animals freely infiltrate into each other's zone. In early fifties massive deforestation was done to settle refugees from Pakistan. During this process, the necessity of sparing a buffer zone was not realized; hence unimaginative planners are solely responsible for this chaos.

Sugarcane Tiger is an exceptional book that explores the still untouched dimension of farmland wildlife. The author is scion of a feudal family that owned a large Zamindari at the borders of Dudhwa National Park. As Hon Wildlife Warden of Kishanpur/Dudhwa, he observed the phenomenon of wildlife in farmlands at first hand. His claim that grass forests were not gone they are just replaced by sugarcane grass is fully agreeable. Sugarcane plantations readily served as extension of habitat for wildlife and tigers came back to live in them. Adapted to human dominated landscape, they lived here by the process of naturalization which also implied that there was enough food for them to subsist on without bothering about human neighbours.

Tarai jungles in Uttar Pradesh, span roughly 550 km in length with a width of 40 kilometres on Indo-Nepalese border. This is the greatest tiger range in the world which also extends through one of the most densely inhabited regions. There is usually a lengthy edge where wildlife habitats interface with human settlements. This area also harbors hundreds of fragmented forest blocks that function as independent complexes with no corridors for the safe movement of wildlife. During pinch-period, when sugarcane cover is harvested these tigers don't go to principal jungles but migrate to local swamps and forests. They periodically keep visiting old haunts in nocturnal rounds, like erstwhile tenants coming back home, which is once again under formation.

Author's way of writing is scientific yet full of thrills of old hunting day. He makes no apologies for being a student of hunting in early days. It is perhaps this skill that made him survive many a close encounters with hard man-eaters in heavy cover of sugarcane as he went on investigating the reasons of big cat's penchant for them.

The book divided into 23 chapters offers a paradigm with empirical point's as why tigers prefer agrarian Vesta. Like water prey and cover is always available in sugar farms. A soft twilight inside crops is extremely soothing to tiger' eye. Blue-bottle flies that constantly irritate a tiger don't enter sugar crops, Staple food grains and non-grain food crops with sugar crops provide protein rich resources for wild herbivores. wild boar, chital, hog deer, swamp deer, viranus lizard, langur, rhesus monkeys jungle fowl and peafowl visit these fields and are cropped by farm tigers along with feral cattle. Tigresses make the crop their nursery to lay litters, and feral cattle provide an ideal food to mothers, helping them stay with their new borns to protect them.

With much food available tigresses continue to produce milk and cubs survive whereas in the jungle mother's milk often dries due to less or no hunting and cubs die.

Interestingly author divides farm tigers into three categories. One that come and go back to jungles, one that live here by predilection and one that have been here for more than a generation have come to be called as sugarcane tiger. This nomenclature may be disagreeable to many but the author implores that "some of these have turned into ecotype animal, least known to the tiger scientists. It might be a putative strain, like frost resistant tiger of Siberia, which is extinct". The idea may be far fetched but when he differentiates between tigers in sugarcane and sugarcane tigers, in anthropogenic and habitat context, the logic lauds the reason.

Sugarcane tigresses are further classified into oriented and disoriented category. The first ones are more cunning, more inconspicuous, better able to escape the threat of extermination and know the nuances of living in human dominated landscape. They go about their business peacefully; cropping feral cattle, abundant blue bull, vermin wild boar and misbehave only when not treated correctly.

Then there are dis-oriented tigers that don't understand 'ecological-constraints' and their aggressive behaviour, not of much survival value in human dominated landscape, generates man-tiger conflict.

The book talks of prevalent man-eating; its present hotspot are Pilibhit sugar fields. The number of juveniles turning to man-eating is high. At this interface, human –wildlife conflict attains its most serious form. The author has analyses many reasons for it like, "a tigress with large cubs has to kill twice as much as she would need to feed herself. He believes it is actually the difficulty in finding food for cubs that initiates females into bad habit. Acquaintance with humans often also breeds condescension and once nature's safety stopcock is blasted out it results in total chaos. Unfortunately the cubs, born in the sugarcane culturally inherit this behavior from their mother making the man-eaters galore".

The details as how farmlands play a critical role in wildlife conservation, serve as corridors to connect isolated patches are explained meticulously. The author raises the question that when tigers are threatened by increasing habitat fragmentation addressing these queries - as how fundamental niches differ from realized niches- would help us to understand as how in future the tigers, whose major ecological characteristics are flesh eating, extensive range and secretiveness, will interact with the changing mosaics of habitat in their landscapes. Farmland wildlife and its first natural consumer Sugarcane tigers and leopards present an ideal model for this study.

This extremely involving book carries the description of Tarai's history, big game shooting, guns, poaching, exploits of man-eaters, thrills, deadly tiger confrontations and finally a vertical study of man-tiger conflict with deep insight into the problem of sugarcane tiger.

Since these tigers operate outside the protected areas there is no solid protection mechanism for them, no forest guards are deputed to monitor their movements. Alas, this goldmine of super predators is falling prey to oriental medicine traders who make substantial capital from it, contributing a direct factor in the terminal decline of this emerging putative strain.

A new word Sugarcane coined by author is aptly scientific. His analysis offers a brilliant, indestructible kernel in a simple paradigm and justifies the word, that is distressingly empirical and empirically convincing. Its my humble submission, as the word is already in circulation amid conservationists, it should be included in the slandered dictionary of wildlife terms with due credit to Dr Rahul Shukla.

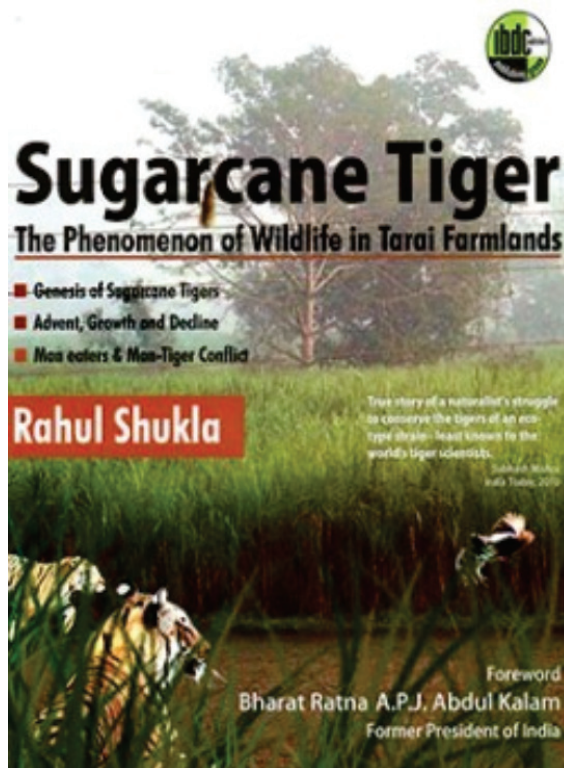
Accept it or not sugarcane tiger is a reality. It is an opportunity for the Wildlife Institute of India, Dehra Dun to take up quantitative study of these orphan tigers of Tarai sugar farms, when a massive qualitative base line work is already available.

Reviewed by Rashmi Kant Shukla IFS (Rtd)
Former Principal Chief Conservator of Forest, Uttar Pradesh
President, Wildlife Preservation Society, Dehra Dun
Email : rkshukla1981@gmail.com
Mobile : 9455009090 (WApp)

Former President of India, Bharat Ratna Dr. APJ Abdul Kalam has messaged that "Dr Rahul Shukla has devoted three decades to monitoring populations of tigers in the sugarcane fields of the Tarai while his vision of a new campaign called "Saving men from Tigers" has added a fresh dimension in the field of wildlife conservation. We need to take his knowledge and attempt to find a way to use this for common good".

In the words of George B. Schaller a German born American Mammologist and Conservationist "A superb and important book...I am intrigued, entranced, and fascinated with descriptions of tiger behavior, tiger politics, and other aspects. Certainly tigers living in cane have adapted to a special situation that benefits them in various ways"

Billy Arjan Singh of Kheri- Lakhimpur and his lobby never agreed with authors observations. The doyen invariably denied the existence of Sugarcane Tigers in Tarai. In words of author when he coined the term Billy was dead against it.



DIAMOND JUBILEE CELEBRATIONS

WILDLIFE PRESERVATION SOCIETY: 60 GLORIOUS YEARS

Dr. Dushyant Singh Gaur MD

Professor of Pathology & Head Lab Services

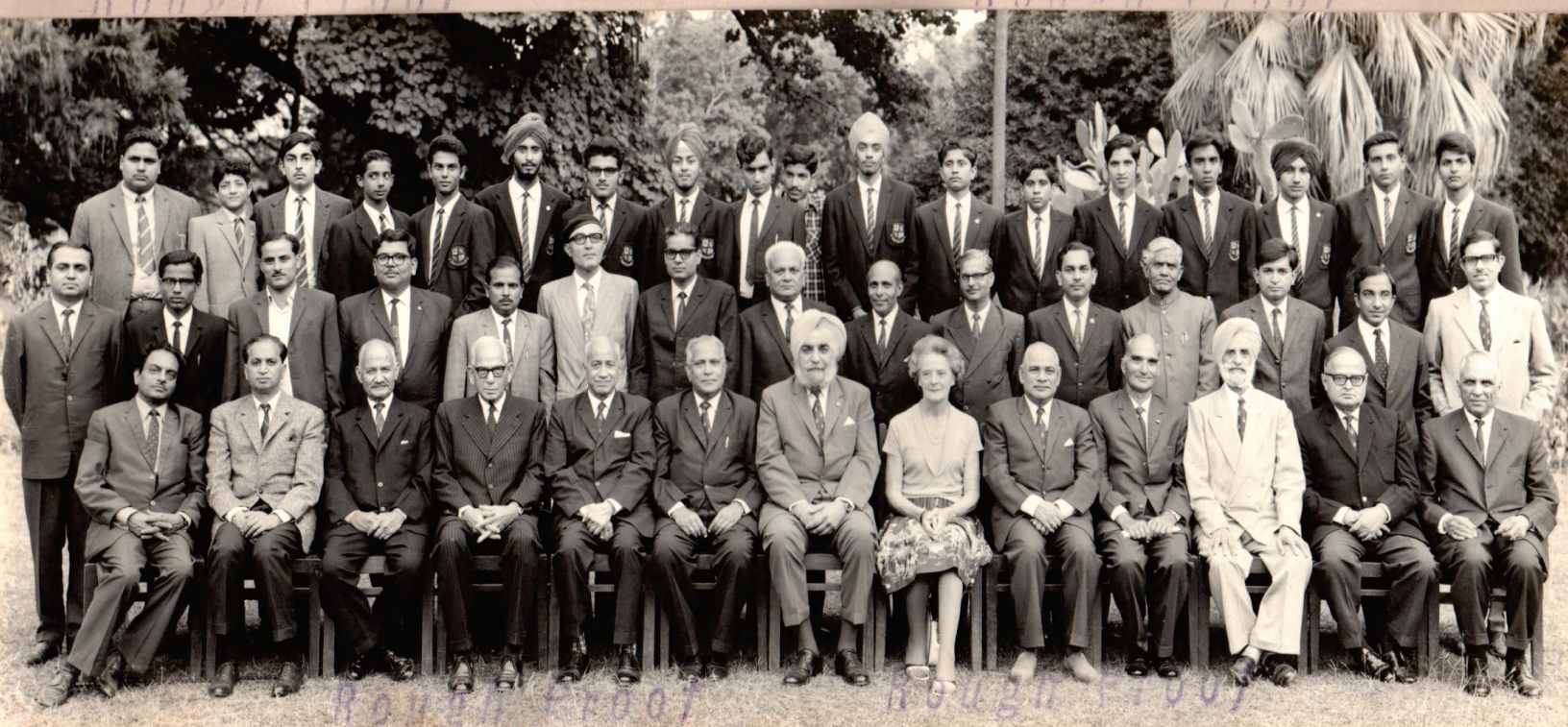
Himalayan Institute of Medical Sciences

Jolly Grant, Dehradun 248016, Uttarakhand

Dugaur2@gmail.com

Since times immemorial, wild animals have been a source of food as well as recreation for humans. However, as humans evolved and developed, intellectuals amongst them started realizing that sustenance of life on Planet Earth depended on saving its natural resources including its biodiversity, as subhuman life forms too need to share the planet with humans. They realized that the perfect balance of the ecosystem among the flora and fauna was slowly tilting in favor of humans, rapidly deteriorating the climatic milieu and driving more and more life forms towards extinction.

The concept of Wildlife Conservation evolved over the last couple of centuries like never before. Realization dawned that protection of wild plant and animal species and their natural habitat was essential. Just as human 'development', in the form of upcoming cities, roads, dams, housing constructions, etc, rapidly started encroaching and destroying the natural environment of our planet, a threat was perceived that in years to come, we might end up irrevocably damaging the natural processes of nature.



Wildlife conservation was defined as the practice of protecting wild plant and animal species and their habitat. It was devised to ensure that nature will be around for future generations to enjoy.

In India, a subcontinent blessed by Mother Nature with some of the most unique flora and fauna, human population boom coupled with rampant hunting of animals, exploitation of natural resources and urbanization, started producing a major dent to its biodiversity.

In 1954, a handful of Wildlife lovers and like-minded enthusiasts, led by Mr PD Strecey, approached His Highness Maharaja Sir Pratap Singh of Nabha, with the idea of forming a non-official organization to serve the cause of Wildlife Conservation. Under the leadership of HH Sir Pratap Singh, the foundation of the 'Wildlife Preservation Society of North India' was laid in April 1958. The first annual general meeting of the Society was held on 19th April 1959.

As the Society expanded and new members joined in, it was realized that keeping it restricted to North India partially failed the concept of its formation. Hence its name was changed to 'Wildlife Preservation Society of India' in 1960, and was registered under the Societies Registration Act XXI of 1860 with Registration number 2730 of 1960-61.



The Maharaja of Nabha remained the President of the Society from its conceptual meeting in 1954 till 24.07.1995. After his demise, Maharani Sahiba of Nabha became the Patron of the Society. She donated Rs. 2,50,000/- to the Society by legal will, which came very handy when the Society was in financial crisis.

The Society office was established at 7A, Astley Hall, Dehradun on 17.10.1978. However, as Astley Hall area became over-crowded and nefarious attempts to encroach its premises twice required police intervention, a new office accommodation was purchased at Heritage Apartment, 18, New Road, Dehradun, after disposing off the earlier premises.

Presently, the Wildlife Preservation Society (India) Dehradun is registered as a non-profit non-government organization (NGO) with current renewal number 329/2011-12.

Wildlife Preservation Society has a rich history to boast of, with 17 Patrons who were Maharajas of erstwhile States of India, Life members like Mr MD Chaturvedi IFS and Mr PD Strecey IFS, Honorary members including EP Gee, Dr. Punjab Rao Deshmukh, Union Minister and the great Dr. Salim Ali of BNHS. The Society also had the privilege of having HE Sri V.V. Giri and HE Sri Fakhruddin Ali Ahmed, former Presidents of the Republic of India as its Chief Patrons in 1969 & 1975 respectively.

Among noted office bearers of the Society, who worked tirelessly to further the interest of the Society, were Late Mr ND Bachkheti IFS (as President), Late Mr. PD Strecey, IFS (as V. President), Late Mr. JN Onial (as Hon. Secretary), Gurukeerat Singh Mann, Dr. RN Mishra & Sri I S Negi IFS (as Hony.



Secretaries). Amongst other members, we had stalwarts like RL Holdsworth of Doon School, Brig. Gambhir Singh, Surveyor General of India, Commandant Military College, MrSSNegi, first Chief Wildlife Warden of UP, President FRI, GGTakle IGFGol, Chief Conservators of Forest J & K, MP & HP, Dr Gardiner Bump, Biologist, US Fish and Wildlife Service, and James A. Sutherland, Dy. News Editor, The Statesman, with many other important personalities. Our Student Members included Mr. Kamal Nath, presently Chief Minister of Madhya Pradesh and Mr. Vijay M Nath, who is even now a Life Member of the Society.

This year, in 2018, WPS completed 60 years and the current elected executive team of the Society, under the able guidance of its President, Mr. Rashmi Kant Shukla IFS and its dynamic Executive President, Dr Prashant Singh, decided to celebrate Diamond Jubilee of WPS by actually stepping out of the four walls of its office and plunging into the center of nature and wildlife conservation activities.

A series of events were planned which kick-started with an active involvement in the celebration of 'Wildlife Week 2018' rubbing shoulders with other stake-holders like Uttarakhand Forest Department and Dehradun Zoo. The Dehradun Zoo became the center of activities which were most imaginatively conceptualized and executed by Mr. Prasana Kumar Patro IFS. Events like wildlife quiz, on-the-spot painting and photography competitions, including mobile photography, were held for children of different age groups. Debate competition for school children which was adjudged by our members Mr. Prakash Singh and Mrs. Rohini Puri. There was overwhelming public response as students from several prominent government and private schools heartily participated in the activities. A wildlife photography exhibition was also held at Dehradun Zoo where amongst others, wildlife photographs of Dr. Dushyant Singh Gaur, a life member of WPS, were displayed. In order to get wider audience, the photography exhibition was later moved to 'Van Bhawan', the head-quarter of Uttarakhand Forest Department.

In parallel events, life member of WPS, Mr. Abhai Mishra held an on-line photography contest for public. Another wildlife photography competition was held by our other WPS life member, Dr. Dushyant Singh Gaur, for faculty and students of various constituent colleges of Swami Rama Himalayan University, Jolly Grant, Dehradun. WPS sponsored gifts for these two contests.

A debate was held on Wildlife Conservation at DBS College, Dehradun, where life members of WPS, Mr Akhlaq Husain and Dr. S. P. Singh adjudged the participant students.

The 'Wildlife Week' celebrations concluded with prize-distribution ceremony on 8th October 2018. Mr. Jairaj IFS, Principal Chief Conservator Forest of Uttarakhand, who was closely involved in all the celebrations, was the Chief Guest of the event.

On 18th December 2018, the Department of Post, Uttarakhand, released a Special Cover to commemorate Diamond Jubilee of Wildlife Preservation Society (1958 – 2018).

SPECIAL POSTAL COVER RELEASED ON “THE WILDLIFE PRESERVATION SOCIETY”

Abhai Mishra

Scientist

DEAL, DRDO, Dehradun

E-mail : abhai_mishra@rediffmail.com

'The Wildlife Preservation Society of Northern India' was launched at the instance of Shri PD Stracey, IFS on 13th April 1958 with headquarter at Dehradun. Society aimed to tackle the problem of India's vanishing wildlife from the 'public' side. H.H.Maharaja Pratap Singh of Nabha became the first President of the Society. Society published its first wildlife journal titled 'Cheetal' on 13th October, 1958. Insignia of a Cheetalbust was designed by Maharaj Kumar of Rajpipla for the 'Cheetal' journal. In April, 1960, society was expanded into an all India body and was re-named as 'The Wild Life Preservation Society of India'. The constitution of the society was adopted on 15th April, 1960. The Society was re-registered in 2017 as 'The Wildlife Preservation Society' (WPS).

To commemorate the diamond jubilee of the society, a Special Postal Cover and Special Cancellation was issued by Department of Posts, Uttarakhand Circle at Dehra Dun GPO on 18 December 2018. The cover was released by Director Postal Services, Sh. Satyakaam, President WPS Sh. Rashmikant Shukla, Executive Vice President, WPS, Dr. Prashant Singh, APMG Sh. Anusuya Prasad Chamola and other dignitaries. Sh. Rashmikant Shukla briefed about the achievements of the society



towards the preservation of wildlife. He elaborated that WPS is the second oldest wildlife society in India after BNHS and its journal “Cheetal”, one of the oldest in the country. During the release function, Department of Posts awarded the Deen Dayal SPARSH Scholarship to the top forty children from the Uttarakhand state ranging from class sixth to ninth for the promotion of Philately. Abhai Mishra addressed the students and motivated them to pursue philately as a hobby. Assistant Post Master General, Sh. Anusuiya Prasad Chamola stressed the need of philately and its contribution towards the all round development of a child. The function was well attended by members of WPS, postal staff and students from different cities of Uttarakhand.



NEW LIFE MEMBERS



Mr Aryaman Arora
Student Life Member
C-10 Greater Kailash II
Enclave, Ground Floor
New Delhi-110048



Mr Prakash Singh
Life Member
Kursela Estate
P.O. Ajodhyaganj Bazar
Dist Katihar-854101



Mr Subhash Gopalrao Bhagwat
Life Member
506, Krishnadeep Towers
Mission Road, Fatehgunj
Vadodara GJ- 390002



Mr Prithipal Singh Aswal
Life Member
45/1 Balbir Road
Dehradun-248001



Mr Rahul Shukla
Life Member
C 4/4 River Bank Colony
Near Daliganj River
Lucknow Pin-226018

Activities



18 November, 2018

Mr Rizwan

delivered a very informative talk on Capture and release of Snakes



THE WILDLIFE PRESERVATION SOCIETY

PATRONS

Mr Ravi Singh, CEO & Secretary General, WWF-India, New Delhi.
Managing Director, Uttarakhand Forest Development Corporation, Dehradun.
Director General, Uttarakhand Council of Science And Technology, Dehradun.
Mr Ajay Raghav, Narauli, District Moradabad (UP).
Capt Arjun Balraj Mehta, New Delhi.

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23.	Ex. Officio Member	Chief Wildlife Warden, Uttarakhand
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EDITED AND PUBLISHED BY

Editorial Board, The Wildlife Preservation Society
 Heritage Apartments, Flat No. 2, First Floor,
 18 New Road, Dehradun, Uttarakhand (248 001)
 email : wpsidoon@gmail.com, Tel : 0135-2652410

THE WILDLIFE PRESERVATION SOCIETY

1. The aims and objects of the Society are as follows:-
 - a) To promote interest and impart knowledge regarding the preservation and conservation of all forms of wildlife, particularly among the youth of the country.
 - b) To cooperate with the Govt. of India and State Governments and with others Societies and institutions having similar aims and objects in working for the interests of wildlife.
 - c) To assist in enforcing and actively supporting the Forests Acts. Wild Birds and animals Protections Acts and Rules etc of State Governments and the Indian Arms Act and Rules in so far as they pertain to wildlife and to bring to the notice of the authorities any infringement of the same and to assist in the detention and prosecution of offenders in respect of such laws.
 - d) To advise and help the Govt. and wildlife administrators in the formation, maintenance and protection of Sanctuaries and National Parks, preservation of wildlife in general and endangered species of India in particular and in the introduction of exotic species into the country, rehabilitation of endangered species etc. and in the formulation and amendments of rules and acts, so to conserve and increase wildlife stocks.
 - e) To raise funds for carrying out the above aims and objects and to found and maintain museums reading rooms and libraries of natural history in order to disseminate knowledge regarding wildlife.
 - f) To carry out publicity and propaganda for the preservation of wildlife in India by means of monographs, journals, films, filmstrips and other feasible methods.
 - g) To assist members of the Society in obtaining facilities for viewing and photographing wildlife in India.
 - h) To conduct research into the problem of Wildlife management in India, and in pursuance of this, to initiate, encourage and, where possible assist in the projects of the study of threatened species and related objects and to provide reference and research facilities for such work.
 - i) To carry on such other activities which will serve the above subjects?

2. What membership of The Wildlife Preservation Society will entitle you to ?
- You will become an active member of the growing group of Wildlife enthusiasts, who enjoy working for and spreading the knowledge of how to conserve India's heritage of wildlife for posterity.
 - You will be entitled to the full use of the library of the Wildlife Preservation Society and its reading room.
 - You will receive a Membership Certificate.
 - You will receive a personal Identification and Membership Card.
 - You will be entitled to buy all publication of the Society at a concessional rate.
 - You will be entitled to buy at concessional rates the Societies Greeting Cards, Calendars. The label badges and the Balance of Nature Game (specially Publication in colour for its educative and recreational values).
 - You will be supplied "Cheetal", the quarterly journal of the society free.
- 3 For membership particulars write to

Honorary Secretary,
The Wildlife Preservation Society,
Heritage Apartments, Flat No. 2, First Floor,
18-New Road, Dehradun, Uttarakhand-248001.

MEMBERSHIP FEES

1. Patrons Fee	₹.1,50,000
2. Life Member Fee (Individual)	₹. 10,000
3. Annual Member Fee (Individual)	₹. 5,000
4. Institutional Member Fee (Annual)	₹. 10,000
5. Institutional Member Fee (Life)	₹. 25,000
6. Student Member Fee (Annual)	₹. 500

Annual Members can convert there membership to Life Membership by paying the balance amount in the next financial year

For easy banking account details are as under:

Name : The Wildlife Preservation Society
Bank : Punjab National Bank, Subhash Road Branch
A/c No : 0111000100650780
IFSC Code : PUNB0469500
MICR Code : 248024026

**MEMBERSHIP FORM****THE WILDLIFE PRESERVATION SOCIETY**

(Established 1958)

Heritage Apartments, Flat No. 2, First Floor,
18 New Road, Dehradun, Uttarakhand (248001)

Tel : 0135-2652410

email : wpsidoon@gmail.com

I hereby apply to be admitted as a Life/Annual/Affiliated/Institutional/Student Member of the Wildlife Preservation Society.

My details are given below: -

Name

Address

.....

.....

Phone No. with STD Code

Mobile No.

WhatsApp No.

Email

Date of Birth

Marital Status ☐ Married / ☐ Single

Hobbies and

Interests

Any conservation

work done

.....

I am attaching the copy of Aadhar card/Photo ID herewith.

PLEDGE

I hereby affirm and assure that I shall abide by the rules and regulations and constitution of WPS.
 I shall not do anything contrary to the ethics of wildlife conservation and do whatever possible at my end, to uphold the dignity of the Society and discharge my duty to save and conserve wildlife and its habitat.
 I declare that there is no criminal case against me.

Date :

Applicant's Signature

Recommended by (Preferably Life member of WPS)

1.

2.

Approval by the Members of Screening Committee (Minimum three) and comments:

1. *Name**Comments*

.....

*Signature*2. *Name**Comments*

.....

*Signature*3. *Name**Comments*

.....

*Signature*4. *Name**Comments*

.....

*Signature*5. *Name**Comments*

.....

Signature



